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MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE,

FOR

MARCH AND APRIL,

1869.

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1869.

MONTHLY REPORT.

WASHINGTON, D. C., April 27, 1869.

SIR: I herewith submit for publication the monthly report for March and April, including a digest of the April returns of the condition of farm stock and diseases of farm animals, with extracts from correspondence, estimate of wool in first hands, and articles upon the following topics: Death of B. P. Johnson; the Spartina Fibre; Ramie or China Grass; Agriculture in Nebraska; Castor Oil Bean; Decrease of Wool-Growing; Smut in Corn Poisonous; Wheat in Minnesota; the Western Grasshopper; Forest Culture; Adulteration of Seeds; British Imports of Cotton and Wheat; Hungarian Wheat Exports; English Cereal Crops in 1868; Agricultural Production in Prussia; Live Stock of European Countries; the Netherlands, and the Projected Exhibition; Facts from Various Sources; and Meteorology.

Respectfully,

J. R. DODGE, *Statistician.*

Hon. HORACE CAPRON,

Commissioner of Agriculture.

CONDITION OF FARM STOCK.

The annual inquiries, at the close of winter, relative to the condition of farm animals, the prevalence and fatality of diseases afflicting them during the past year, and other considerations connected with stock-growing, were returned on the 1st of April, with varied and general information upon many points, among which are the following:

1. Has there been any prevailing disease among the cattle in your county during the past year?
2. Has the Spanish fever prevailed among cattle in your county? If so, what has been the loss, and what facts not heretofore given can be presented?
3. Has the hog cholera prevailed? If so, what has been the loss?
4. What diseases have prevailed among sheep, and to what extent?
5. Has any unusual disease prevailed among horses?
6. How many tenths of last year's wool clip remain on hand?
7. In what condition have cattle come out of winter quarters?
8. In what condition have sheep come out of winter quarters?
9. How will losses of cattle and sheep in wintering compare with the previous winter?

10. Have wool-growers sold sheep to be killed for their pelts and tallow, or to be sent out of the State? And if so, to what extent?

The mildness of the winter has been favorable to health and condition of all kinds of farm stock. In the more northern States there were few

sudden changes of temperature, few alternations from one extreme to another, and very little weather of much severity or discomfort to the denizens of the barn and stock-yard. The reported losses from diseases of all kinds are less than for any year since this record has been systematically kept, showing conclusively that all cattle diseases are far less the result of climatic causes, or of feeding upon injurious plants and unwholesome fodder, than the effect of starvation, exposure and neglect.

The condition of cattle, as compared with their status in the spring of 1868, is improved, except in Florida, Alabama, Mississippi, Kansas and Nebraska. Cases of pleuro-pneumonia are reported in the vicinity of the cities of New York, Philadelphia, Baltimore, and Washington. The Spanish fever, communicated by southern cattle, caused a brief season of panic, and occasioned heavy local losses at points of reshipment in Kansas, Missouri, Iowa, Illinois, Indiana, and to a smaller extent eastward to the Atlantic coast. Abortion has been somewhat prevalent on dairy farms of the middle and eastern States. Black tongue, black leg, hollow horn, and a variety of "distempers," "murrains," and other undefined forms of disease are reported, but not to the usual extent. Less than one county in ten, of the entire number, reported the prevalence of disease, further than the slight ailments which rarely prove fatal. Not a county in Ohio or Michigan furnishes evidence of the existence of unusual disease among cattle.

Those States in which winter shelter is not provided are marked by lower condition of farm stock, and a higher rate of mortality than Maine or Minnesota. The southern States, the best portion of the country for stock-growing, have almost literally no provision either for feed or shelter in any portion of the year. As a business, stock production there is little more than an appropriation of spontaneous growth, costing neither money nor labor, except in the in-gathering or harvest.

The reports relative to sheep are not so favorable. The wool business has been comparatively unprofitable of late, and the inevitable result is neglect, short commons, a supply of mouldy hay, and the roughest treatment, in too many instances, resulting in leanness, weakness, and the insidious approaches of disease. Where they have been suitably cared for they are healthy, and as Merinoes are in present disfavor, disease is mainly among flocks of that breed. Were it not for the culling process, by which several millions of the poorest (60,000 in some cases in a single county) have been remorselessly slaughtered for their pelts and the small modicum of fat that could be drained by hydraulic pressure from their juiceless carcasses, the ravages of disease would have proved far greater. This weeding out of the victims of poverty will result beneficially in elevating the average of health and condition. Wool-growers, whose fears have overcome their judgment, and caused the depreciation of their flocks or the abandonment of their business, will ere long regret their hasty action. Already a reaction has commenced; prices of wool are stiffening, and the value of sheep is slightly advancing. If there is no legislative interference with the growth or manufacture of wool, a better day will soon dawn, and the time will prove auspicious for enlarging rather than abandoning the production of wool.

The States in which the comparison, in point of condition, is unfavorable with last spring, are Maine, New Hampshire, Vermont, Alabama, Mississippi, West Virginia, Missouri, Illinois, Indiana, Ohio, Michigan, Wisconsin, Iowa and Kansas. The losses from disease, dogs, wolves, and freedmen and other plunderers in the south, together with the depreciation from slaughtering for pelts, present an unfavorable comparison with the previous year in almost every State in the Union, and represent

a total reduction in numbers of not less than 4,000,000. Yet all these losses; exclusive of the voluntary destruction of sheep for their wool, skins, and fat, make an aggregate of loss no greater than that of the previous year.

Horses, being valuable, are generally well fed and stabled, and appear to have been remarkably exempt from disease the past year. Glanders, which became so prevalent in the territory swept by the ravages of war, is a disease yet dreaded, though far less common than in 1866 and 1867. Blind staggers is yet common, especially in miasmatic localities; charbon is fatal in Arkansas and elsewhere in the southwest; lung fever and other diseases are occasionally reported.

The following notes, furnishing briefs of the most noticeable data received, will give an idea of the extent and character of the diseases of farm animals during the past year, though the returns are necessarily deficient in veterinary accuracy:

CATTLE DISEASES.

NEW HAMPSHIRE.

Hillsborough county.—For several years past there has been some loss of cattle in mountain pastures, from some unknown form of disease. Similar losses have occurred in neighboring counties. The cattle are generally found dead before any appearance of sickness has been observed. Inconvenience and loss have resulted from cows dropping their calves prematurely, often causing the loss of the cow, and generally injuring her for milk production.

MASSACHUSETTS.

Hampshire county.—A few cattle have died from eating “smut corn.”

NEW YORK.

Chautauqua county.—Abortion among cows is prevalent.

Kings county.—Pleuro-pneumonia has been very fatal for the past 12 or 15 years. Since vaccination has been practiced the loss has been diminished greatly. The virus is inserted in the end of the tail. Loss by vaccination of healthy cattle one or two per cent.

Erie county.—A new disease prevails among milch cows. Symptoms, watery eyes, yellow matter running from nostrils, breathing heavy, blood passing from the intestines, cramps, resulting in death in eight to twelve hours. A few cases have been saved by giving calomel in doses of twenty to thirty grains in cold water once in three or four hours.

Lewis county.—Abortion about as in former years.

NEW JERSEY.

Essex county.—Abortion in cows prevails. Removal of aborting animals, cleanliness in stables, and the use of sound, sweet hay generally arrests the disease.

PENNSYLVANIA.

Montgomery county.—The disease among horned cattle so destructive during the last few years has almost entirely disappeared. The principal remedy applied appears to be nothing more or less than a complete reno-

vation of barns and stalls, by ventilation and free use of lime, and a regular healthy diet. This, to many large farmers whose loss in cattle was very heavy, has proved the most effective remedy.

Delaware county.—Pleuro-pneumonia has prevailed considerably, proving fatal to animals first attacked, but becoming milder so as to admit of treatment in subsequent cases.

MARYLAND.

Baltimore county.—Our correspondent says: "We have had the pleuro-pneumonia in our county among cattle during the past three years. The malady has been very destructive—some individuals losing almost their entire herds. The disease is of a highly contagious character, and the most skillful cattle surgeons are unable to control it. The losses have been much lighter during the past year. Sixteen valuable Ayrshire cows perished in one stable; a few other losses, varying from five to fifteen, occurred. In most of the stables where the disease prevailed with great virulence the previous year it has subsided, owing to a strict quarantine. The careful isolation of the infected herds had the desired effect in reducing the malady to a much smaller scale."

Prince George county.—Pleuro-pneumonia attacked one herd and four or five died. *The remainder were sent to Washington for beef*, and the disease did not spread.

VIRGINIA.

Highland county.—Black leg is common among young cattle. The cattle are usually found dead before sickness is observed. Bleeding, when in season, is deemed a sovereign remedy. Symptoms, coagulated blood about the legs, hip and back, under the skin. Hollow horn prevails every winter and spring. An unknown disease has made its appearance among young cattle. Symptoms, loss of appetite, stupidity, watery matter running from nose and eyes. No remedy has been found.

Washington county.—Some calves died, having small worms in great quantity in the windpipe.

Rockbridge county.—A few deaths from black tongue.

NORTH CAROLINA.

Bertie county.—Black tongue rather destructive.

Cherokee county.—Fatal cases of swelling between the jaw bones. Our correspondent lost five yearlings and has a three-year-old affected. Many fatal cases in the county. On opening they are found to contain much yellow water, with yellow spots on the flesh after skinning.

Rutherford county.—Five per cent. loss from disease.

Surry county.—A distemper, presumed to be Spanish fever. Loss about five per cent.

Johnson county.—A few milch cows affected. The head and neck swell, and the animal dies in a few days. The parts swelled appear to be charged with yellow water.

Caldwell county.—"Bloody murrain," "hollow horn" and "distemper."

GEORGIA.

Murray county.—Distemper has prevailed in some sections—all cases fatal.

Walker county.—"Bloody murrain" to a great extent, 80 per cent. of

those attacked died; old cattle most susceptible to the disease; no successful remedies.

Gordon county.—A few cases of murrain; 90 per cent. of those attacked died.

Tatnall county.—Murrain to a considerable extent, loss 20 per cent.

ALABAMA.

Coosa county.—Some unknown disease, symptoms resembling effects of a venomous snake bite; great swelling of head and jaws, difficult breathing, fever, great thirst, but inability to swallow; none recovered.

Clay county.—Black tongue has prevailed.

FLORIDA.

Nassau county.—Two nameless diseases have existed for years; the first is invariably fatal, has killed hundreds of cattle. Symptoms: the animal is attacked with lameness, walks stiffly and painfully, great emaciation soon follows, and in a short time death. In the second, the mucous membrane lining the mouth, nose, throat and fauces becomes highly inflamed, ulceration and erosion soon supervene, and if not promptly treated death will ensue in a few days. Copperas combined with charcoal has been used successfully in this form of disease.

Suwannee county.—A few cases of murrain.

MISSISSIPPI.

Generally healthy throughout the State, except in Yazoo county, where charbon has existed with heavy losses.

LOUISIANA.

Carroll Parish.—A few cases of hollow horn.

Tensas Parish.—Isolated cases of charbon, nearly all fatal.

TEXAS.

Fayette county.—Murrain to a limited extent. Not unfrequently the fattest cattle are its victims.

Harris county.—The past winter has been very unfavorable to young calves, especially where the cows were milked. A farmer lost 23 out of 26 calves dropped. No cause assigned.

Walker county.—A few cases of “bloody murrain.”

ARKANSAS.

Clark county.—One farmer lost nine cows from a disease, communicated by Texas droves, quartered for two nights in his pens.

Columbia county.—Upon several adjoining farms fat cattle have died suddenly from some unknown disease.

Madison county.—A disease has prevailed, called by some “murrain,” by others, Spanish fever. Loss 10 per cent.

Monroe county.—A number of cattle died from a disease somewhat similar to Spanish fever, but believed by many to be different.

TENNESSEE.

Polk county.—A distemper or “murrain” has prevailed during the warm weather, often proving fatal. It ceases at the coming of frost.

WEST VIRGINIA.

Pendleton county.—Many young cattle die from neglect during winter.
Boone county.—Murrain, to some extent.
Mineral county.—Black leg among calves.

MISSOURI.

McDonald county.—Some cases of Spanish fever or “dry murrain.”
Adair county.—No prevailing disease. A few have died of murrain.

ILLINOIS.

Lawrence county.—Milk-sickness prevailing, more or less, as usual.
Lee county.—Some cases of swelling in fat cattle, under the neck and about the glands.

INDIANA.

Whitley county.—One person lost seven head out of 50, very suddenly. Cause unknown; probably smut in corn-field in which the herd ranged.

Lawrence county.—Some steers feeding, and in fine condition, have unaccountably died. Considerable mortality among calves weaned in the fall; dying during the winter with a bloody diarrhoea. No particular discharge of blood, but bloody mucus abundant. After death there was found underneath the skin a quantity of yellow serum; and even before death this yellow serum would collect in dependent portions of the body, where there was loose skin, as under the jaw. About half of our correspondent's calves that were attacked died.

OHIO.

Lucas county.—Some cattle have died; something resembling a leech perforating the liver. Cattle die in a few hours; blood passing them freely previous to death.

WISCONSIN.

Buffalo county.—Considerable loss in cattle in the south part of the county; supposed by some to be caused by smut on corn-stalks; but other cattle have died of the same disease that have not eaten the stalks. It seems to be an inflammation of the small stomach, or what is known as the dry murrain.

MINNESOTA.

Rice county.—A few cattle have died. In one case, five in 24 hours; attributed to eating corn-smut.

Winona county.—Some losses of cattle from black leg; not infectious. One ox was skinned and looked healthy in every part, except one hind quarter, which was a mass of dark bubbles, as when decomposition commences.

IOWA.

Dickinson county.—We have had several cases of black leg.

Appanoose county.—A few cases of black leg among calves and yearlings. Can be prevented by feeding copperas and salt freely.

Jasper county.—A considerable number died on being turned into the corn-stalks. Loss in herds attacked ranged from 3 to 15 per cent., and in a few as high as 50 per cent.

Sac county.—Many cattle died in December; cause unknown. Some supposed from eating smut-corn, but that has been disproved.

Audubon county.—A few cattle died with dry murrain; supposed by some to be caused by smut in corn-stalks.

Story county.—In November a disease appeared among herds recently turned into corn-stalk fields. The disease is evidently dry murrain. A *post mortem* examination showed the mucous membrane of the stomach highly inflamed, with symptoms of poison. It is evident that the disease is generated in the stalk-fields, and probable that it is produced by gorging the stomach when first turned into the stalks, after being confined on the wild frost-bitten prairie grass, and lack of sufficient water.

Taylor county.—Black leg has prevailed among calves in crowded sheds.

Calhoun county.—A few head lost; supposed to be from eating smut-corn.

Marshall county.—Many cattle have died from eating smut on corn-stalks.

KANSAS.

Allen county.—A few calves died from the black leg.

Shawnee county.—Some cases of dry murrain; fed on prairie hay cut after frost.

NEBRASKA.

Dakota county.—Dry murrain; supposed from eating smut in corn-fields.

Washington county.—A disease has prevailed, commencing with a kind of stupor, followed by spasms, the animal probably dying in an hour.

Cass county.—A few cases of black leg.

THE SPANISH FEVER.

The ravages of the Spanish fever, or splenic fever of Professor Gamgee, were greater last season than ever before. The mode of transportation, by steam eastward from the frontier railway stations, and up the Mississippi river in steamboats, brought the contagion into the heart of the country, and disseminated it from the Mississippi to the Atlantic. Formerly it was confined to the frontiers, the length of time elapsing in travel on foot sufficing to eliminate the virus of the disease from the systems of the emigrating cattle before their arrival on the banks of the Mississippi.

A few cases are reported in the eastern States; in New York, New Jersey, and in Lancaster county, Pennsylvania.

In Ohio, slight losses were suffered in Hamilton county; six head, among two car loads, in Wyandott; a few cases in Green, Mercer, and Hancock.

In Indiana, from 400 to 600 cases in Benton county; two droves were destroyed in Jasper county; 100 deaths are reported in Marion, and losses are given in White, Newton, and Hendricks.

In Illinois, among other reports, are losses in Ford county of 500 head; 100 in Grundy; large numbers in Champaign, (valued at \$150,000 at least;) 40 in Douglas; 19 in Clinton; and small losses in Massac, Pulaski, Effingham, Cook, Iroquois, Macon, Pope, Morgan, Alexander, St. Clair, and Du Page.

In Missouri heavy losses occurred; in St. Louis there were 1,400 cases

of cows and 300 of heifers; in Newton the loss numbered 300. In many other sections of the State the disease was more or less prevalent, as in M'Donald, Butler, Clark, Polk, Bates, Cass, Henry, Montgomery, Benton, Mississippi, Cedar, Dade, and Hickory; but the details of these returns, together with those of other States, are reserved for a more complete history of the outbreak in the Annual Report.

NEW YORK.

Dutchess county.—Five western cattle died of Spanish fever at Miller-ton, where they were quarantined. The infection did not spread.

NEW JERSEY.

Hudson county.—A large number of Texas and Indiana cattle were brought into the cattle yards and abattoirs in our county last August, sick with Spanish fever. Our State agricultural society forbade any more being brought into the State; and those sick were quarantined, and after a thorough examination were put into rendering vats, and the yards and pens disinfected with carbolic acid. No disease has appeared since. Three inspectors were appointed by the State society, who quarantined all the suspected cattle on arrival; and when it proved sickness from any infectious disease they were killed and put in the rendering vats.

PENNSYLVANIA.

Westmoreland county.—A lot of western cattle were driven through this county last summer, stopping over night on a farm three miles south of Greensborough. Some eight or ten head took sick during the night, and were left with the farmer to be killed. The symptoms were said to be those of Spanish fever.

GEORGIA.

Chatanooga county.—This, or similar fever, has prevailed to a great extent; loss about 20 per cent.

Hall county.—Has existed to a certain degree. A strong decoction of the bark of the white walnut, given in quart doses, is said to cure 90 per cent. of those attacked. Correspondent has used it 20 years, and never failed.

Pulaski county.—A disease somewhat similar killed a number on one farm.

[There is a confusion of names of diseases in the south. From the statements of symptoms and remedies it is highly probable, these Georgia cases were not the "Spanish" or splenic fever.—ED. REP.]

TEXAS.

Our *Lamar county* (Texas) correspondent gives as the result of his observations in Texas and other States, including Illinois, at the time of the greatest virulence of the disease there, that there is no such disease in Texas, or south of the latitude of Middle Tennessee or Arkansas. He mentions the fact that hundreds were herded for months on Grand Prairie, Arkansas, at the season of the highest excitement in Illinois, without disease among either Texas or Arkansas stock. The following points are indicated as the result of his observations:

1. That it did not show itself until the very hot weather that visited that section, although Texas cattle had come in nearly two months before.

2. That Texas cattle were free from any signs of disease, and improved rapidly on arrival.

3. That, although healthy, they left disease behind them; and all home cattle, feeding upon the same pastures, or drinking at the same fountains, were in danger of the contagion.

4. That removal to new pastures and clean water would stay the progress of the disease among those not yet affected by it.

5. That native cattle would not take the disease from running on new pasture, with other native cattle, although the latter might be suffering and dying with the disease.

6. That the disease, its mode of action and of communication, and the remedies, were mysterious.

Fayette county.—Spanish fever only prevails amongst unacclimated animals. A teaspoonful each, of spirits turpentine, copperas, and sulphur, is said to be a certain cure if given in time.

Walker county.—A few neighborhoods have been visited by Spanish fever.

ARKANSAS.

Independence county.—In the eastern part of the county for some weeks last spring.

KENTUCKY.

Carroll county.—Several cases of death from presence of a drove of Texas cattle.

MISSOURI.

Newton county.—Prevailed during the summer and fall. Loss not over 300 head.

McDonald county.—Five per cent. of all native cattle have been lost. Texas cattle do not suffer unless there is an admixture of more than one-half native blood. Remedies prove unavailing.

Butler county.—Has visited some portions of the county.

Clark county.—Three cases reported. Remedy used: a drench made by mixing half pound of Epsom salts with a strong decoction of peach-tree leaves—one quart of the latter.

Polk county.—In the eastern part of the county, in August, from the passage of Texas cattle through that section.

St. Louis county.—Fourteen hundred milch cows and 250 to 300 heifers and steers lost by this disease.

Bates county.—To some extent, but less than in years past.

Cass county.—Few losses this year, as diligent watch has been kept against droves.

Henry county.—Loss 200 to 300 head.

Montgomery county.—Forty-five head lost last autumn. Only three of those attacked recovered.

Benton county.—A few isolated cases.

Mississippi county.—Slightly; brought in from Cairo, Illinois, by Texas cattle. Loss 40 head.

Cedar county.—A few cases imported with southern cattle.

Dade county.—During the summer and fall, along the highways where Texas cattle stopped to graze; the loss was 25 per cent.

Hickory county.—To some extent, but no new facts noted.

ILLINOIS.

Champaign county.—Our correspondent says: “Spanish fever has prevailed in this county, commencing on the 27th day of July, 1868, and cattle have continued to die of the same disease up to January 1, 1869. In this township the loss is 90 per cent.; entire county, 75 per cent. It is a blood disease; the blood under a powerful glass proves this. It has been argued, and tried to be proven, that it is a disease not easily taken. I now have in my possession a large amount of evidence from good men showing it to be a disease very easily given. A number of cases can be given where the only exposure was by driving a short distance over the road where the Texas cattle had passed from tame pasture to barn lots, the natives being kept up all the time only when in transit from lots to pasture. Blood examined in the earliest stages of the disease shows a diseased condition of the same. As the disease progresses from day to day the blood, examined by a good glass, shows the gradual destruction of vitality, and at dissolution is a mass of putridity.”

Clinton county.—Spanish fever among the cattle; loss 19 head. Eighteen head died of black tongue. Cure: pull the tongue out of the mouth, rub it hard with a brick, and then rub vinegar on it. Two applications sure cure.

Douglas county.—Forty head lost from Spanish fever in one neighborhood through which Texas cattle passed.

Iroquois county.—Spanish fever has prevailed.

Macon county.—No cases except those that came in contact with one lot of Texas cattle.

Massac county.—A few cases, supposed to be Spanish fever.

Pope county.—Spanish fever in one locality for a short time.

Morgan county.—A few drove cattle died, but more from ill-usage than Spanish fever.

Alexander county.—Spanish fever prevailed in Cairo, but did not get into the country.

Cook county.—Some Spanish fever in the south part of the county, from contact with cattle shipped to Chicago.

Effingham county.—Spanish fever killed a few cattle in one neighborhood where some Texas cattle were herded for a short time. Loss small.

Ford county.—Loss about 500 head; a majority of them cows.

Grundy county.—Spanish fever in one town; loss about 100 head.

Pulaski county.—A few deaths from the passing of Texas cattle.

St. Clair county.—A few head have died from supposed Spanish fever.

DuPage county.—One man lost 18 head by Spanish fever.

INDIANA.

Marion county.—About 100 head died of Spanish fever.

White county.—Some loss from Spanish fever.

Benton county.—From 400 to 600 head of native cattle have died from Spanish fever. In a neighboring county a herd of diseased Texas cattle were driven about eight miles along a road, and, the wind being from the south, cattle along on the north side of the road took the disease, without either being driven along the road travelled by the Texas cattle or drinking water that had been exposed in any manner. These facts induce the belief that the disease was communicated by the wind. The Texas cattle were taken right off the cars and driven along the road.

Hendricks county.—Spanish fever in a few places. Comparatively little loss.

Newton county.—Eight to 10 head died of Spanish fever, taken from a drove of Texas cattle driven along the road.

Lawrence county.—Considerable loss from Spanish fever along a road travelled by a drove of Texas cattle.

OHIO.

Hamilton county.—Very slight, and only among cattle that have come in contact with foreign stock.

Wyandot county.—Loss six head in two car-loads brought from Chicago.

Greene county.—Ten to 12 native cattle died. Disease taken from Texas cattle.

KANSAS.

Dickinson county.—Spanish fever has prevailed to a great extent. Loss over \$6,000.

Republic county.—Ten head of oxen died of Spanish fever last fall, after feeding on the track of Texas herds. A few cases recovered.

Butler county.—Cases last summer and fall. Many of the Texas cattle have died here during the winter.

Wyandot county.—Six fatal cases in the fall; contact with Texas cattle.

DISEASES OF SWINE.

MASSACHUSETTS.

Bristol county.—Some hogs from western droves have had cholera.

PENNSYLVANIA.

Bradford county.—Some cases of hog-cholera have appeared. Loss, one in 300.

MARYLAND.

Montgomery county.—A few cases—not an epidemic.

Washington county.—A few losses have occurred.

Queene Anne county.—One-fourth have died. Tar fed in corn has stayed the disease in some cases.

VIRGINIA.

Spottsylvania county.—Less than 50 cases in the county.

Buckingham county.—Many hogs died from some unknown disease. The symptoms were stiffness of the joints, loss of appetite, enlargement of the glands of the throat, generally resulting in death by suffocation in a few days.

Patrick county.—A few cases.

Washington county.—Somewhat prevalent.

Tazewell county.—Loss one-third.

Rockbridge county.—Loss two per cent.

Henry county.—Loss one per cent.

Nelson county.—In some sections stocks have been reduced 50 per cent. in two years.

Roanoke county.—Much less severe than in 1866 and 1867. Loss 5 per cent.

Highland county.—A disease among hogs exists from which they die after lingering for months. They have difficulty in breathing and apparently a stoppage in the nose.

Prince William county.—In the southern part of the county one-tenth of the hogs died last fall.

NORTH CAROLINA.

Columbus county.—About 20 per cent.

Currituck county.—Some losses from what is called staggers.

Duplin county.—To an alarming extent; at least 33 per cent. destroyed. One man lost 51 out of 55. Many who usually fatten 50 to 100 did not save 20 head.

Forsyth county.—Loss 50 per cent.

Gaston county.—Average loss 15 per cent. On some farms 50 per cent.

Madison county.—Loss 25 per cent. last fall.

Moore county.—Considerable loss, supposed to be cholera.

Rutherford county.—In certain localities, killing nearly the whole stock. Most fatal among pigs. Average loss 25 per cent.

Surry county.—Loss 10 per cent.

Stokes county.—Loss 25 per cent.

Haywood county.—Loss two to three per cent.

Yadkin county.—Loss about 25 per cent.

Caldwell county.—Average loss 10 per cent.

Chowan county.—Loss about 5 per cent.

Randolph county.—A few deaths, supposed to be from cholera.

Beaufort county.—Loss three per cent.

Carteret county.—Loss 30 per cent.

Iredell county.—In the northern part of the county killed two-thirds of the swine.

Harnett county.—About five per cent. killed by disease of the throat, sometimes fatal in a few hours. A few cases of a disease which seems to affect the fore legs—the hogs being able to stagger only a few feet at a time.

Roanoke county.—Has prevailed to some extent.

SOUTH CAROLINA.

Abbeville district.—Very destructive—average loss six to seven per cent.

York district.—Loss about 25 per cent.

Greenville district.—Large numbers swept off; in some sections 25 per cent.

Spartansburgh district.—Loss averages 5 per cent.

Chester district.—Extensively; two-thirds of the hogs destroyed.

GEORGIA.

Clinch county.—Principally among young pigs and shoats.

Early county.—None since 1864.

Murray county.—Attacks and kills young pigs only.

Walker county.—Has prevailed in certain localities for years; 90 per cent. of the hogs in the infested districts died. Raw cabbage given *ad libitum* is said to act not only as a specific, but also as a prophylactic.

Towns county.—Not so prevalent as formerly.

Jackson county.—To a considerable extent; loss heavy. Tar put into the animal's mouth, and cutting off the tail and ears is said to act as a specific. Pine tops boiled in sweet milk and used as a drench is also said to prove beneficial.

Pike county.—Prevails here.

Tatnall county.—Loss 75 per cent.

Walton county.—A few cases; loss trifling.

Spalding county.—To a limited extent.

White county.—Has continued fatally for eight years. No remedy.

Emanuel county.—20 per cent. died.

Franklin county.—Loss 10 per cent. of entire stock.

ALABAMA.

Coosa county.—To a considerable extent, loss averaging 33 per cent.

Calhoun county.—Loss 25 per cent.

Shelby county.—Loss one-half entire stock.

Clay county.—Has prevailed but not extensively.

Randolph county.—Loss 20 per cent.

FLORIDA.

Leon county.—Only a few cases.

Suwannee county.—In a slight degree.

MISSISSIPPI.

Amite county.—Very slightly.

Lee county.—Has destroyed 50 per cent of crop. No remedy known.

DeSoto county.—Over the whole county; loss not less than 50 per cent.

Attala county.—Not extensively; many supposed cases are caused by eating green cotton seed.

Hinds county.—A few isolated cases.

Yazoo county.—In a marked degree.

Marion county.—Violently; loss 10 per cent. No remedy.

LOUISIANA.

Carroll parish.—To a marked extent; loss 20 per cent.

Tangipahoa parish.—Slightly; loss trifling.

TEXAS.

Ellis county.—More than six per cent. of the stock lost by what was supposed by some at the time to be cholera, but is generally believed to have resulted from eating "cockle burrs." The symptoms were very much like those of cholera. Some cases were cured by doses of tar.

Henderson county.—To a very limited extent. Supposed cause, want of care and corn.

ARKANSAS.

Conway county.—Loss one per cent.

Independence county.—In the southeastern part of the county in September and October. Loss 10 per cent.

Lafayette county.—There are some cases every year in the latter part of summer and early fall, thought by some to be caused by over feeding on acorns and corn.

Monroe county.—Hog cholera prevails, but less than for several years.

Montgomery county.—Loss 25 head only.

Washington county.—Prevailed in January and part of February. Loss 10 per cent. of fattening hogs and 25 per cent. of the entire stock.

Yell county.—To some extent in certain localities.

TENNESSEE.

Hawkins county.—33 to 50 per cent. loss since December from hog cholera or disease called by that name. Many persons have lost their entire stock.

Hickman county.—Prevailed greatly in August, September, and October. One-third of the "killing hogs" and one-half the stock hogs died.

Monroe county.—Loss estimated at from 400 to 600 hogs, worth from \$2,000 to \$3,000. Some farmers have lost their entire stock.

Montgomery county.—Very heavy loss.

Polk county.—Loss 10 per cent.

Rutherford county.—Loss 40 per cent.

Sullivan county.—To a very limited extent.

Washington county.—Loss 10 per cent.

Robertson county.—Has prevailed but little for the last 10 months. For the six months previous to that period the loss was 33 per cent. Owing to high prices of hogs and abundance of corn, great attention was paid during the past winter to hogs. They have increased rapidly in numbers and are looking well.

Sumner county.—Loss 15 per cent.

Perry county.—Loss 5 per cent.

Warren county.—Raging to considerable extent at this time. In some localities whole stocks have been lost.

Marion county.—Loss about 5 per cent., much less than usual.

Bledsoe county.—Loss 5 per cent.

Williamson county.—Loss very great.

Lincoln county.—Loss considerable.

Smith county.—Loss 33 per cent.

Union county.—Loss 4,000.

Weakley county.—A small loss.

Bedford county.—Loss 20 per cent. Less prevalent and malignant than formerly.

Davidson county.—Loss 50 per cent.

Giles county.—Loss 15 per cent.

Greene county.—Prevails to an alarming extent.

Haywood county.—Loss 15 per cent.

Gibson county.—Loss 4 to 5 per cent.

Johnson county.—Considerable loss in portions of the county.

Jefferson county.—Loss 40 per cent.

Knox county.—Loss 40 per cent.

Meigs county.—Loss 10 per cent.

Obion county.—To a very limited extent.

Henry county.—To a very small extent.

KENTUCKY.

Graves county.—Prevalent.

Fayette county.—Principally confined to young hogs. Preventives are relied on rather than remedies. The course generally and successfully pursued here when the disease appears among a lot of hogs is to separate the well from the sick, and change to new beds, destroying the old beds by fire or otherwise. Dead animals are burned or buried. Frequent change of lots or fields is indicated as desirable, also the use of fresh clay in the beds as a disinfectant.

Clay county.—Prevalent for years. Large average loss.

Christian county.—About 25 per cent. loss.

Kenton county.—More or less prevalent for last 10 or 12 years. Loss last year, 7 to 10 per cent.

McCracken county.—10 per cent.

Ohio county.—Loss estimated at 5 per cent.

Oldham county.—Loss at least 5 per cent.

Carroll county.—Loss, from farm stock, one-sixth; from stock fed on slopes at distilleries, at least one-third.

Henry county.—10 per cent.

Spencer county.—Has prevailed yearly since 1858. Loss 5 per cent.

Butler county.—Loss 5 per cent.

Hardin county.—Loss about 20 per cent.

Warren county.—Loss not over 5 per cent.

Meade county.—Very little since the fall of 1868.

Johnson county.—Loss light; not more than 10 per cent.

Hopkins county.—A pest for years. Loss 25 per cent.

Webster county.—In some localities. Loss about one-fourth.

KENTUCKY.

Boone county.—Very little. Stone coal in liberal quantity (say a peck per day to 20 hogs) is ascertained to be an efficient prophylactic. Hog raisers have used it with most satisfactory results.

Livingston county.—Pigs born six months after the mother has the cholera will inherit the disease. First time our correspondent's sows pigged after having had the cholera at least half the pigs died—some of them having reached 40 pounds weight.

WEST VIRGINIA.

Wyoming county.—Loss 50 per cent.

Kanawha county.—Loss 5 per cent.

Boone county.—Considerable loss.

Brooke county.—A few cases.

Morgan county.—Has prevailed to some extent the last three years.

Ohio county.—Loss 50 per cent.

Nicholas county.—Loss (from this or similar disease) 10 per cent.

Putnam county.—Has prevailed here for 8 or 10 years, and has gradually reduced the stock of hogs to less than half the number formerly raised; and the stock has degenerated. I have never known the cholera to attack hogs that were constantly and plentifully supplied with common salt.

Monroe county.—A loss of 20 per cent. in one or two sections; average, 5 per cent.

MISSOURI.

Maries county.—Loss, by cholera, one-third of the entire stock; most severe among the older animals; many farmers have lost all their hogs.

Holt county.—Very slightly; loss 3 per cent.

Clinton county.—A disease (though not known to be cholera) carried off 16 per cent. of the young hogs.

Jefferson county.—50 per cent. of the stock lost during the summer.

Saint Louis county.—Less loss than for many years, below 1 per cent.

Cass county.—Only in southeastern portion; loss, in entire county, 1 per cent.

Daviess county.—A few cases reported.

Howard county.—Very little cholera.

Livingston county.—To some extent; loss 3 or 4 per cent.

Morgan county.—Slightly.

Mississippi county.—Loss about 12 per cent.

Pemiscot county.—Prevailed during spring and summer; loss 25 per cent. of the entire stock.

Schuyler county.—To a limited extent; loss not more than 12 per cent. of last year's.

Scott county.—Not generally; small loss in some localities.

Callaway county.—A few cases, of doubtful genuineness, reported.

ILLINOIS.

Clinton county.—From 1 to 1½ per cent. loss.

Iroquois county.—Few cases—probably 1 out of 500.

Jackson county.—Hog cholera has prevailed to some extent.

Massac county.—A few cases of hog cholera.

Menard county.—Loss about 7 per cent.

Mercer county.—Loss 20 per cent.

Pope county.—Considerable loss in some localities; in one section the loss by death reached 20 per cent.

Williamson county.—Loss 10 per cent.; still prevalent.

Boone county.—A number of hogs have died, but no cases of cholera known.

Clay county.—A few cases of hog cholera.

Kendall county.—Loss about 20 per cent.

Lawrence county.—In some portions nearly all the hogs have died with cholera; its ravages more extensive since the middle of January.

Scott county.—Loss estimated at 25 per cent.

DeKall county.—Not to any extent. Our pork-growers have concluded that fattening swine for many years upon the same ground has been the means of developing this disease, and now change them frequently.

DeWitt county.—Many hogs have died of a disease called cholera; it is mostly confined to mothers and their pigs, and to shoats from 40 to 125 pounds weight. Some get weak all at once and shun their mates, burying themselves in litter, refusing to eat, breathing short and hard, have a cough, grind the teeth and froth at the mouth, while, at the same time, have no discharge from the bowels; others become stupid, have a bad cough, accompanied with disagreeable discharges from the bowels, and gradually pine away and die; others, again, are taken as with the staggers, whirling around until they fall, their eyes seem to be set in their heads and have an unnatural wildness of look; this last class, also, have a severe thumping in the sides.

Franklin county.—About 25 per cent. loss; still prevalent, but to less extent.

Knox county.—Loss, about 500 in the county.

Lee county.—Hog cholera little known; loss from other diseases about 3 per cent.

Logan county.—Loss 10 per cent.

Macoupin county.—Loss probably 5 per cent.

Rock Island county.—At one distillery 50 hogs died in one week.

Stark county.—To less extent than in former years; loss not one-fourth as great.

Warren county.—A few cases in one township.

White county.—Loss about 5 per cent.

Adams county.—To some extent.

Pike county.—To limited extent.

Henderson county.—But little the past year. If hogs are fed once in two weeks, regularly, with corn-cob charcoal and salt, they will not be troubled with cholera.

INDIANA.

Spencer county.—Loss 3 per cent.

Boone county.—In some localities: loss about 300 head, value \$5,000.

Union county.—A few cases; not one per cent.

Grant county.—Prevalent to a great extent last fall.

Wayne county.—Loss \$10,000 to \$12,000.

Benton county.—To limited extent; loss not more than 100 hogs.

Clinton county.—Slightly, in one neighborhood; loss about 100 head.

Hancock county.—Loss about 50 per cent.; still prevalent.

Johnson county.—Loss 20 per cent.

Carroll county.—To a limited extent.

Fayette county.—Loss 10 per cent.; still prevalent.

Laurence county.—Prevalent throughout the county; loss immense—whole stocks being swept away in some instances; the heaviest loss among fattening hogs.

Marion county.—Loss 10 per cent.; 100 per cent. greater among pigs than among hogs.

Greene county.—Loss small compared with former years.

Posey county.—Loss about 50 per cent.

OHIO.

Warren county.—From 3 to 5 per cent. loss among fattening hogs.

Jefferson county.—To some extent. Loss 10 per cent.

Greene county.—Loss 1 in 30 perhaps.

Butler county.—Loss not over 1 per cent.

Seneca county.—Hogs more or less troubled with long, white worms in their intestines, 6 to 22 inches long, the size of pipe stems. Salt has no effect upon them.

MICHIGAN.

Berrien county.—A few cases; supposed to be hog cholera.

WISCONSIN.

Grant county.—But few cases in this county.

Iowa county.—Some farmers have lost 10 to 20 hogs from a disease commencing in the throat, with weakness in the fore legs.

Washington county.—A few cases of hog cholera.

IOWA.

Dubuque county.—Only two or three cases.

Lucas county.—One man feeding several hundred lost 170 within a short time.

Appanoose county.—Loss, 7 per cent. One farmer lost 60 out of 85. Those who feed stone coal freely have thus far been exempt.

Buchanan county.—A few cases.

Louisa county.—Loss, 5 per cent.

Cedar county.—About 1 per cent. loss.

Jackson county.—A few very fat hogs have died from suffocation, the throat showing signs of inflammation. One farmer lost 30 pigs by what he called diarrhoea; in my opinion, dysentery, from feeding oats.

Des Moines county.—Not over 1 per cent.

Page county.—A few cases in one lot.

Taylor county.—10 hogs found dead, it is feared caused by cholera.

DISEASES OF SHEEP.

MAINE.

York county.—A sheep distemper is noticed. Symptoms, wheezing cough, running at the nose, and gradual pining away. The lambs did not grow well last season, and the growth of wool was deficient. A wet season is one of the causes assigned for the malady. Swellings upon the throat were noticed in some cases.

Franklin county.—A few cases of foot-rot.

Kennebec county.—A disease commenced with lower portion of the head and throat, loss of appetite, skin and flesh turn dark green, and death ensues in two to four days. Decomposition is rapid and the odor “fearfully fetid.” Scanty pasture in the fall and poor condition are assumed to be predisposing causes. Merinoes are principally affected; as their grades run with coarse-wool blood the liability to disease decreases.

VERMONT.

Orange county.—Some foot-rot exists.

Addison county.—One-fourth of the flocks are more or less affected with the foot-rot or “fouls,” which is not so contagious as the foot-rot formerly was.

Windsor county.—Loss heavy from debility; some flocks lose half, in some cases nearly all.

NEW HAMPSHIRE.

Sullivan county.—Foot-rot prevails extensively, especially among Merinoes. Coarse wools are healthy, and in better demand.

Merrimack county.—A disease called “water garget” has been slightly prevalent.

MASSACHUSETTS.

Berkshire county.—Foot-rot and scab have probably affected full a third of the flocks. Both diseases were brought into the county by a flock from the north fifteen months ago.

Hampden county.—Three-tenths of the lambs have died from want of natural food; many of the mothers have little milk.

NEW YORK.

Oneida county.—Scab affects one-tenth of the sheep.

Queens county.—Scab prevails. One wool grower with whom the tobacco wash failed, uses the following with good results, rubbing in the mixture well, and repeating in four or five days if necessary: sub-carbonate of potash, one ounce; lac sulphur, two ounces; oil of tar, one ounce; whale oil, one pint.

Chautauqua county.—Foot-rot. Some have sold entire flocks to get rid of it.

Dutchess county.—A limited amount of scab and rot.

Ontario county.—A sheep panic exists, and foot-rot prevails.

Steuben county.—Losses 15 per cent. from neglect and low feeding.

Allegany county.—Six-tenths of the sheep have foot-rot; some scab is reported.

Tompkins county.—Grub, rot and other diseases.

NEW JERSEY.

Camden county.—Foot-rot has depreciated the value of sheep 10 per cent.

PENNSYLVANIA.

Lawrence county.—Scab among poorly kept sheep.

Mercer county.—Foot-rot and scab prevail extensively.

Erie county.—Foot-rot has reduced flocks one-third.

Tioga county.—One flock in 20 is afflicted with scab.

MARYLAND.

Kent county.—A few cases of scab.

VIRGINIA.

Fairfax county.—Foot-rot among fine wool sheep—five to ten per cent.

Roanoke county.—Several hundred have been killed by wolves; the county is paying \$25 each for wolf scalps.

York county.—About half the sheep have scab; 20 per cent. of the lambs were lost in January and February.

Fauquier county.—Foot-rot discourages sheep husbandry.

NORTH CAROLINA.

Currituck county.—Rot is the prevailing disease.

Union county.—Rot; loss two to three per cent.

GEORGIA.

Towns county.—Foot-rot; loss 10 per cent.

ALABAMA.

Coneech county.—“Dirty tail,” caused by negligence; loss 10 per cent.

Randolph county.—Losses from foot-rot 10 per cent.

FLORIDA.

Liberty county.—“Sore-head” has existed, but not fatally.

MISSISSIPPI.

Amite county.—The rot, from heavy rains and insufficient shelter, loss 10 per cent.

Attala county.—Loss 10 per cent. from rot.

Yazoo county—Rot to a large extent.

TEXAS.

Burnet county.—Fifty per cent. of lambs lost by heavy rains, which cause the growth of sour grasses and over-growth of ranges. Remedy: frequent salting. Scab has prevailed to some extent.

Blanco county.—Scab, causing a decrease in wool clip last spring of 50 per cent. This season there will be an increase of 20 or 30 per cent.

Burleson county.—Nearly every flock affected with “scab.” The disease was brought from the western States in 1860.

Collin county.—Scab; loss 10 per cent.

Ellis county.—Scab, but it is disappearing from flocks that have received even a moderate share of attention.

Fayette county.—Scab is the great scourge, and tobacco the most effectual remedy.

Gillespie county.—Scab; but no losses.

Kendall county.—Scab is prevalent, 50 per cent. being affected.

Nueces county.—Scab; not a flock in the county but is more or less affected.

Travis county.—Scab to a very limited extent.

Victoria county.—Some scab; losses not great where flocks have been regularly sheared.

ARKANSAS.

Madison county.—Distemper or rot slightly; loss one per cent.

TENNESSEE.

Meigs county.—Rot; attributed in great measure to the confinement of sheep in close quarters on account of dogs.

Monroe county.—Loss from rot five per cent.

Polk county.—Loss from rot 15 per cent.

Sullivan county.—Catarrh is prevalent.

KENTUCKY.

Henry county.—Foot-rot has caused considerable loss among Merinoes.

Whitley county.—Rot among sheep wintering in the mountains and sheltering under cliffs.

WEST VIRGINIA.

Tucker county.—Grub and rot; loss 20 per cent.

Morgan county.—Considerable mortality among sheep imported from other districts, especially of improved breeds. Cause not clearly understood, but by some asserted to be neglect and scanty food, which are better endured by native animals.

Nicholas county.—No special disease; but during fall and winter sheep have been unhealthy.

Rot is mentioned as prevalent in a greater or less degree in Lincoln, Barbour, Preston, Braxton, Clay, Ohio, and Monroe counties.

MISSOURI.

Texas county.—Foot-root among Merinoes brought from Ohio, but diminishing; one ounce blue vitriol diluted with two ounces vinegar recommended as a wash for the hoofs.

Clark county.—Scab; brought from Ohio; but not much loss.

Lewis county.—Probably 33 per cent. of the flocks affected with scab.

Moniteau county.—Scab, brought from Pennsylvania and Ohio, with flocks of Merinoes. The rigid separation of flocks has checked it.

Lincoln county.—Scab or “pelt rot” to limited extent.

Montgomery county.—Foot-rot on the increase, and eight per cent. of the stock affected with scab.

Benton county.—A few flocks affected greatly by scab. One farmer who neglected the usual preventives and remedies lost 300 out of a flock of 400. The foot-rot has also prevailed, in some cases 40 dying in one flock of 165. The disease brought from Ohio.

Livingston county.—Twenty-five per cent. of the sheep have either foot-rot or scab, which were brought to the county by drovers. Loss from those diseases and neglect, 10 per cent.

Marion county.—Scab has prevailed to a very limited extent.

Adair county.—A few losses in some flocks by scab, and some foot-rot.

Callaway county.—Scab in some localities, but only causing loss of wool.

Scotland county.—Foot-rot to slight extent.

Shelby county.—Scab in some neighborhoods, causing great loss of wool, but few deaths.

Dekalb county.—Scab in several flocks, but little loss except in wool.

Ralls county.—Last spring almost every flock was affected with scab. Loss, eight per cent. Disease imported with Michigan Merinos; many thousands of which have been brought into the county, but most of them have perished. Native stock, Southdowns, Cotswolds, and their crosses, now healthy.

ILLINOIS.

Clinton county.—About two per cent. loss from scab. Tobacco cures it.

Iroquois county.—Scab; loss one-tenth.

Madison county.—Nothing but scab in roaming flocks.

Menard county.—A few flocks affected with scab.

Mercer county.—Scab and foot-rot exist in probably five per cent. of the flocks in the county.

Winnebago county.—Foot-rot and scab in many flocks. A flock of 150 lambs, dropped in May, did well until a few days after the hot term in July, when many of them were taken with severe purging, as in cholera; a few, without purging, wandered around in a small circle, nibbling grass and dirt. All of the latter and most of the first cases died in a few hours after being attacked. They commenced dying at the rate of two or three a day the first week, increasing to four or five a day the third week, when they were taken from the ewes. Eighty were driven to another pasture; the remaining 24, affected with the appearance of dysentery, were put in the sheep-barn and treated for that disorder. Of the latter nine died; of the former, but one. None of the sheep were affected.

Kendall county.—Foot-rot and scab; five per cent. of the flocks affected. Wolves have destroyed five per cent.

Lake county.—Grub in the head more severe than usual, and very fatal, at least one-fifth dying of it.

Scott county.—Foot-ail and scours, about five per cent.

De Witt county.—Large numbers have died with the scab. Farmers are adopting the plan of killing all the infected ones, and, after taking off the pelt, feed the carcass to hogs. One-fourth of the sheep have been thus disposed of.

Grundy county.—Foot-rot and scab; loss about 20 per cent.; 50 per cent. affected.

Lee county.—Foot-rot, scab, and grub; the former having damaged the flocks more than all the other diseases combined, and will shorten the wool crop of the county at least one-third, and the flocks one-fourth to one-third.

Logan county.—Few flocks free from the scab. Sheep on the decline in this county.

Putnam county.—Heavy losses from neglect.

A number of counties report the existence of scab, foot-rot, and grub in the head to limited extent.

Adams county.—Nothing except ticks.

INDIANA.

Stark county.—Large number died, 50 per cent., cause unknown.

Benton county.—Scab and foot-rot in most flocks in the northern part of the county.

Cass county.—A few cases of foot-rot.

Neinton county.—Scab and foot-rot, bad; grub more fatal than either.

La Grange county.—Foot-rot prevalent, but not fatal.

Warren county.—Few large flocks have escaped the scab, and none the foot-rot.

Marion county.—Some foot-rot, which is new here.

Greene county.—Considerable losses by neglect.

White county.—Scab and foot-rot; extent, one-tenth.

Jasper county.—Foot-rot in all large flocks.

OHIO.

Stark county.—One-third of the large flocks in this end of the county attacked with a disease resembling typhoid-pneumonia, which carried off one-fourth of the flocks attacked. Foot-rot in one-quarter of the flocks; few cases of scab.

Hancock county.—Foot-rot causes considerable trouble.

Henry county.—Two-tenths loss from neglect, and sheep in poor condition in the fall.

Marion county.—Foot-rot prevails extensively.

Tuscarawas county.—Foot-rot and pale skin have prevailed, causing many sheep to be pelted in the fall; and many died during the winter. Decrease in the county fully one-third.

Lorain county.—Foot-rot, confined to fine wool sheep; two-thirds of flocks affected.

Lucas county.—Foot-rot and grub, the former in fine wool sheep.

Mahoning county.—Foot-rot prevails generally. Scab mostly disappeared.

Putnam county.—Foot-rot, 10 per cent.

Shelby county.—Grub, 10 per cent.

Morrow county.—A great many have died—one-fourth to one-third of the flock—many of them apparently in good order, mostly last spring's lambs. Mortality greatest when the drought was most severe last summer and the grasshoppers most abundant, and many think the excrements from the latter on the grass was poisonous. Sheep apparently in health drop over and die in a day or two.

Knox county.—Paper skin and foot-rot.

Washington county.—Foot-rot more prevalent than usual.

Vinton county.—Ten per cent. of sheep affected by the grub.

Hardin county.—Foot-rot; one in 500.

Harrison county.—Foot-rot; probably three-fourths of all the flocks affected, to the extent of one-fifth each. Most of them slightly.

Jefferson county.—Paper skin; confined chiefly to yearlings. Loss about five per cent.

Perry county.—Foot-rot; perhaps one-tenth.

Carroll county.—Foot-rot, paper skin, grub; 20 per cent. pelted or died of disease.

Erie county.—Foot-rot and neglect.

Fulton county.—A distemper has prevailed among sheep. We find no remedy. It commences with falling off rapidly in flesh, a loss of appetite, extreme weakness, and usually a dysentery sets in three or four days

before the sheep dies. They live about two weeks after being attacked. There seems to be an inward fever, with constant craving for water. From 30 to 50 per cent. die when attacked.

Union county.—No disease, but five per cent. have died from exposure and debility.

Muskingum county.—Grub and foot-rot. The loss by pelting sheep thus affected has reached 25,000 head. Returned for taxation in 1868, in the county, 220,409 head.

Medina county.—Foot-rot, to the extent of 50 per cent. of the whole.

MICHIGAN.

Jackson county.—Foot-rot and scab. Most of the diseased sheep slaughtered.

Macomb county.—About two-tenths slaughtered.

Berrien county.—A few flocks troubled with foot-rot.

Ottawa county.—Scab in about one-fourth of the county. Some died; some sold at low prices, and many killed for pelts and tallow; whole flocks were thus disposed of.

Washtenaw county.—Scab and foot-rot.

WISCONSIN.

Walworth county.—Foot-rot the most destructive; some cases of goitre.

Winnebago county.—Loss from neglect perhaps one-twentieth.

Eau Claire county.—“Hollow belly,” one-tenth.

Green Lake county.—No disease, but more have died than usual.

Juneau county.—Loss from neglect and insufficient food.

La Fayette county.—Many sheep lost by neglect from feed and dogs; at least two-tenths.

Calumet county.—Loss of 60 out of a flock of 100. The disease appeared in ulcers, which reached the intestines. The heart was also diseased.

MINNESOTA.

Blue Earth county.—Grubs have been fatal in many instances.

Steele county.—Scab; few have escaped.

Nicollet county.—A few cases of grub, scab, and foot-rot; perhaps 4 per cent.

Stearns county.—Scab, to a limited extent.

Fillmore county.—One flock, fat last fall, have declined in health, the wool has dropped off; many have died, and it is thought that all will die.

Houston county.—Our correspondent had several cases in his flock of sores under the shoulder, in one or two instances involving face and legs, emitting watery matter and a noisome odor. One died after suffering two years. Sulphur is a partial remedy.

IOWA.

Keokuk county.—Seab has destroyed 20 per cent. of the sheep of this county.

Lucas county.—Nearly all the sheep in this county have the seab.

Appanoose county.—Seab; loss, 5 per cent.

Buchanan county.—Large loss from seab in the southeast part of the county.

Jasper county.—Twenty-five per cent. have either seab or foot-rot.

Louisa county.—Foot-rot and seab; half our flocks affected by the latter.

Cedar county.—Scab and foot-rot to the extent of one-twentieth.

Madison county.—One-tenth affected by seab, caused by tobacco wash.

Page county.—Loss of 200 in one flock last fall.

Story county.—Thousands have died of seab; scarcely a healthy sheep.

Marshall county.—Many have died from severity of the winter.

DISEASES OF HORSES.

MAINE.

Piscataquis county.—Rare cases of fever.

VERMONT.

Grand Isle county.—The “ordinary horse distemper” is slightly prevalent.

NEW YORK.

Albany county.—Cases of typhoid-pneumonia are reported.

Chautauqua county.—A distemper among colts, not generally fatal.

Tioga county.—A few deaths from disease of the kidneys; attributed to hard (lime) water.

NEW JERSEY.

Cumberland county.—Losses have occurred from blind-staggers, confined to horses pastured on the borders of marshes or turned out at night.

PENNSYLVANIA.

Wayne county.—Many valuable horses have died of lung fever.

Montgomery county.—Two cases of lung fever, both caused by excessive driving and neglect in leaving them in the cold without covering. Horses from the west are subject to this disease after standing three or four days in the cars in cold weather.

DELAWARE.

Kent county.—A farmer in the vicinity of Dover (Timothy Slaughter) lost six horses from an unknown disease, the symptoms similar in some respects to “strangles.” Four of his horses died in 24 hours after the first attack, another within a week, and the sixth and last in less than a fortnight. Mr. Slaughter is a careful farmer, and has succeeded well with stock. The stable in which the horses were kept is a new building, whitewashed both inside and out.

MARYLAND.

Talbot county.—A disease exists called blind-staggers, probably cerebro-spinal meningitis.

VIRGINIA.

Botetourt county.—Glanders is noticed. In one case of the disease it appeared to be communicated to the owner and also to a colored man, both of whom died after great suffering.

Nelson county.—Glanders.

Highland county.—Some cases of gleet and also of staggers.

Montgomery county.—Fears are expressed that glanders will become general.

Prince William county.—Some cases of glanders.

NORTH CAROLINA.

Gates county.—A few cases of blind staggers.

Camden county.—Staggers and lung-fever, a few cases.

Perquimans county.—Some cases of staggers, generally fatal.

Greene county.—Several fatal cases of glanders among mules.

Montgomery county.—A few cases of glanders among mules—all fatal.

Haywood county.—Distemper has been more fatal than usual.

Yadkin county.—A few cases of glanders.

Chowan county.—Lung fever; loss great in some localities.

SOUTH CAROLINA.

Georgetown District.—Blind-staggers prevalent. Remedy: 1st. Bleed largely from the neck; 2d. Stimulating clysters of salt, thin gruel, and warm water, injected by a large horse syringe every day; 3d. Counter irritation over the entire forehead, by blistering with boiling water, from the spout of an ordinary tin coffee pot, the eye being protected by a flannel roller, closing the lids firmly, and pouring the water in a small stream; 4th. The bicarbonate of soda internally, two ounces at a dose, in a quart of lukewarm water every six hours. Over one and a half pounds were administered (from a bottle in the ordinary manner of drenching) with a view to its defibrinizing effect upon the blood.

GEORGIA.

Walker county.—Glanders, received from army horses, at close of war.

Telfair county.—Staggers to a limited extent.

Morgan county.—Bots kills more horses here than all other diseases combined.

Floyd county.—Blind-staggers prevails, supposed to be caused by feeding on unsound corn.

Pike county.—Larger number than usual died from blind-staggers.

Troup county.—Staggers has prevailed.

ALABAMA.

Macon county.—Some deaths from glanders.

Morgan county.—Cases of blind-staggers.

Randolph county.—Blind-staggers and sleepy-staggers, loss five per cent.

FLORIDA.

Suwanne county.—Blind-staggers prevailed fatally.

MISSISSIPPI.

Tippah county.—Blind-staggers unusually fatal.

De Soto county.—Many deaths from blind-staggers.

Washington county.—Mules and horses died from charbon; loss of former from 30 to 40 per cent.

Yazoo county.—Charbon largely over whole county; loss in the swamp region 75 per cent. of mules and horses.

LOUISIANA.

Carroll parish.—Fatal cases of blind and sleepy-staggers; an insufficient quantity of healthy food is supposed to cause the former, and small grass, with a depraved condition, produces the latter.

East Feliciana parish.—A few cases of glanders.

Tangipahoa parish.—Blind-staggers more fatal last summer than usual.

Morehouse parish.—Many mules and horses died from blind-staggers and yellow-water.

Tensas parish.—Charbon made sad havoc; all the first cases died.

TEXAS.

Atascosa county.—The “loin disease,” slightly.

Ellis county.—A few cases of glanders; also a disease called “loin distemper,” in one section of the county, which carried off many horses. The animals attacked by it begin to droop, and finally give down in the loins and die.

Henderson county.—A few cases of distemper, but not fatal.

Houston county.—A very fatal disease to some extent, but its name is unknown.

Rusk county.—Blind-staggers, or inflammation of the brain.

Red River county.—A few cases of blind-staggers.

Travis county.—A disease appeared amongst cavalry horses last spring, which was successfully treated by giving calomel, oil, and quinine, in their order.

ARKANSAS.

Desho county.—“Charbon” carried off a few horses and mules.

Drew county.—A few losses by blind-staggers; supposed cause, feeding unsound corn. Successfully treated by drenching with a solution of camphor in brandy, and blistering over the brain. Twenty-five per cent. of those affected recovered.

Clark county.—Blind-staggers; fatal among horses and mules fed with worm-eaten corn.

Independence county.—Blind-staggers prevalent in November and December.

Madison county.—Blind-staggers, or inflammation of the brain. Five per cent. affected, half of which die.

Monroe county.—Blind-staggers prevalent; probable cause, feeding damaged corn.

Montgomery county.—Considerable loss from blind-staggers. Cause stated, “rotten corn.”

Phillips county.—Many cases of “charbon,” or equine erysipelas; ten per cent. fatal.

Union county.—More horses and mules than usual have died from diseases not reported.

Washington county.—Blind-staggers; loss two per cent.

TENNESSEE.

Haywood county.—Quite a number of horses and mules have died from blind-staggers, caused by eating worm-eaten corn. Losses from a similar cause are reported from Hardeman and Rutherford counties.

KENTUCKY.

Laurel county.—Glanders is prevalent.

Metcalfe county.—Glanders introduced by army horses.

WEST VIRGINIA.

Lewis county.—A disease among yearling colts; nature unknown.

Raleigh county.—“Distemper.”

Monroe county.—In one or two neighborhoods a distemper similar to glanders, not fatal, but often rendering the horse useless. The disease has existed in the county for ten or twelve years.

MISSOURI.

Worth county.—Lung fever; very fatal.

Lewis county.—A few cases of distemper, or strangles, amongst colts, last fall.

Stone county.—Two cases of glanders reported.

ILLINOIS.

Clinton county.—From 40 to 50 abortions of mares, believed to have been caused by exposure.

Winnebago county.—A number of horses have died of lung fever.

Pope county.—A few cases of glanders.

Boone county.—Distemper prevailing, and quite severe.

DeWitt county.—Distemper the only disease; principally confined to young stock.

Woodford county.—About 100 horses carried off by lung fever last winter.

Champaign county.—A few horses have died suddenly, and in a few instances the singularity of the cases has caused alarm.

INDIANA.

Warren county.—The common distemper only. The glanders prevailed in one locality, but was arrested by killing those infected.

OHIO.

Geauga county.—No disease but common distemper.

Lucas county.—An unusual number have died from something resembling colic.

MICHIGAN.

St. Joseph county.—One or two cases of what is called distemper.

Leelenau county.—Many cases of distemper. Have heard of but one death.

Barry county.—Only disease, wind colic, from feeding new corn.

WISCONSIN.

Rock county.—Distemper unusually severe.

Polk county.—A great many horses have died of distemper.

Dunn county.—A great many horses have died of lung fever.

MINNESOTA.

Wright county.—The distemper has prevailed to some extent, but not fatally.

Monongalia county.—Distemper; several colts have died.

Chisago county.—Many cases of what farriers call diphtheria. It commences by dryness of throat. The horse will hack and cough, and soon breathe short and quick, as if inward fever had set in. Unless immediate relief is given death is certain.

LeSueur county—Distemper and putrid sore throat have affected 20 per cent. of the horses.

Watonwan county.—Quite a number of horses and colts have been attacked with a disease resembling diphtheria. About one-third of those attacked have died. The animal is suddenly attacked with soreness of the throat, refusing food and drink, with inflammation of the submaxillary glands; a discharge from the nostrils, first yellow, then green and then white, in the same case; eruptions on nose, legs, jaws and neck.

Morrison county.—Five or six cases of lung fever reported.

Stearns county.—Lung fever has prevailed to an alarming extent, fatal in many cases.

Wabashaw county.—Distemper has been prevalent.

IOWA.

Sac county.—A number of horses affected by a chronic inflammation of the liver.

Clinton county.—Many cases of distemper, a few fatal; also a few cases of lung fever.

Monona county.—Putrid distemper—a severe run last fall; a few deaths.

Marshall county.—A disease prevailed last spring that was fatal in almost every case. It seemed to originate from local causes.

Pocahontas county.—Several horses attacked by a kind of distemper. The animal first droops his head, and appears unable to move, while the muscles draw convulsively around the chest, until the horse dies from sheer exhaustion. The best remedy is rosin and sulphur internally.

KANSAS.

Republic county.—A few cases of glanders.

Woodson county.—Several deaths from distemper among colts.

NEBRASKA.

Merrick county.—A few cases of distemper and of glanders.

Pawnee county.—A few horses from distemper.

Cass county.—Distemper only.

CONDITION OF STOCK.

Notes of stock condition might be presented from a thousand counties, many of them interesting and suggestive, most of them of a tenor indicated in the general remark at the opening of this report. To bring this exposition into reasonable limits, answers to questions 7, 8, and 9, relative to the condition of cattle, of sheep, and comparative losses in wintering, will not be presented in detail.

The inhumanity disclosed in reports of losses from "want of shelter," from "starvation," "small quantity of food," are sickening and disgusting to one possessed of a single kindly impulse. There is no portion of the country where shelter and feeding are not requisite at times;

in Texas, where cattle grow and thrive by millions, are places where, during the present season at least, "fully 20 per cent. die in the latter part of the winter and early spring from poverty." It is gratifying to remark amid the general neglect of this latitude, that in one county in Georgia "those that have been housed look well," and that in another "they are better than usual from being cared for." Passing by the returns suggestive of so many unpleasant reflections, and looking to the more encouraging indications furnished in these reports, items like the following are examined with pleasure, and a lack of space only prevents their multiplication:

Orleans county, Vt.—A large quantity of western corn is being fed, as hay is scarce. This will keep the condition of stock good.

Norfolk county, Mass.—Owing to a mild winter, good supplies of hay, and the encouragement given to milk production, stock is in better order than for many years. Our correspondent, who is secretary of the Milk Producers' Association of Massachusetts and New Hampshire, attributes the improvement in good part to the organized effort, meetings, and discussions of the association.

Westchester county, N. Y.—Cattle wintered better than for several years. Farmers are building better stables and taking better care of their stock. Many are getting machinery and fixtures for cutting and cooking food.

Warren county, N. Y.—Our farmers are learning that it is better to feed their grain than to sell it, and they are ashamed to have their cattle look as poor and weak in the spring as was too common a few years ago.

As to sheep, a permanent cause of their poverty of flesh and liability to disease is indicated in this paragraph:

Addison county, Vt.—Flocks have wintered well, except where neglected by wool-growers, disgusted with their business in consequence of the maltreatment by Congress in postponing the tariff, and giving importers one year to flood our ports with foreign wool, thereby destroying the profits of wool-growing.

REDUCTION OF NUMBERS OF SHEEP.

MAINE.

Cumberland county.—A considerable number of sheep have been killed for pelts and tallow; the meat generally being sent out of the State in a frozen condition.

Franklin county.—Sales of Merinoes were made last fall to be killed for hide and tallow by farmers becoming interested in mutton breeds.

Somerset county.—One-fourth have been sold.

NEW HAMPSHIRE.

Rockingham county.—Stocks have been reduced by sales for the local meat markets.

Belknap county.—Probably one-fourth have been killed for their pelts and tallow.

VERMONT.

Orange county.—The best wool growers "hold on;" some have sold one-half, some three-fourths, and a few have sold all.

Orleans county.—All sheep and lambs (fine wool) that drovers would buy were sold for market last fall, and 25 per cent. of the remainder were sold to be killed for their pelts and tallow.

Washington county.—One-fourth have been killed for pelts and tallow.

MASSACHUSETTS.

Berkshire county.—Probably one-third of the flocks of last year have been sold or slaughtered; in some cases the prices were scarcely more than the value of the pelts.

Norfolk county.—The few sheep killed are well fattened and sold for choice mutton.

NEW YORK.

Oneida county.—Ten per cent. have been pelted or shipped off.

Chautauqua county.—Many sold their sheep at the price of their pelts—75 cents to \$1.50 each.

Genesee county.—Decrease of sheep 30 per cent.; some sold to leave the State; some for pelts and tallow; two or three thousand for the latter purpose in the town of Pembroke. Fewer lambs raised than usual.

Ontario county.—Sold for pelts; the object is to get rid of sheep.

Onondaga county.—Perhaps one-fourth have been sold; no such destruction has occurred in 20 years previously.

Niagara county.—At Suspension bridge 5,000 have been killed for hide and tallow.

Seneca county.—Flocks have been culled closely, and the refuse sold for pelts and tallow. Some keep them in good condition, and sell for mutton. William Dunlap kept 1,500, sheared and sold the wool at close of winter, and afterwards the mutton, and saved money by not starving the animals and selling for their pelts.

Steuben county.—Reduction, 20 per cent.

Tompkins county.—The number diminished 15 per cent. in two years.

PENNSYLVANIA.

Butler county.—One-third of last year's flocks have been sold. Wool will not pay here at less than 60 cents per pound.

Lawrence county.—So great has been the destruction that mutton has sold for 25 cents per quarter all winter.

Mercer county.—Many slaughtered; some have sold 75 per cent. of their flocks.

Westmoreland county.—Large numbers sold to drovers, principally for eastern markets.

MARYLAND.

Kent county.—None killed for pelts, but two-thirds of the stock is sold yearly to butchers. Fat sheep are sometimes exchanged in the autumn for poor ones; sometimes obtaining two or three for one.

VIRGINIA.

Cumberland county.—Formerly there were 5,000 sheep; now not 500. The diminution is charged in large measure to the plundering habits of freedmen.

Bedford county.—Some sales for pelts and tallow are noticed.

GEORGIA.

Telfair county.—Thirty-three per cent. sold for mutton.

Stewart county.—Not raised on account of dogs; 20 dogs to one sheep here.

Cobb county.—A few sold for pelts and tallow.

Hancock county.—Occasionally sold to butchers; number reduced 33 per cent. since 1861.

Troup county.—A large number sold for home consumption.

MISSISSIPPI.

Attala county.—No care taken of sheep; considered almost worthless; sold from 75 cents to \$1 per head.

TEXAS.

Blanco county.—About 600 head sold for mutton.

Kendall county.—One small flock of fine Merinoes were sent to Mexico for the purpose of introducing improved stock and creating a market for them.

Walker county.—About 30 per cent. sold to drovers for market.

TENNESSEE.

Lincoln county.—Among droves sold for mutton, numbers have been sent to Huntsville, Alabama.

Greene county.—Number sent to southern markets estimated at about 400.

KENTUCKY.

Fayette county.—Large numbers sent to market for mutton.

Lincoln county.—More than usual are sent to market for mutton.

Greenup county.—About four-tenths have been sold to be killed for tallow and pelts or to be sent out of the State.

WEST VIRGINIA.

Harrison county.—Stocks are being sold off; sheep husbandry is unpopular; preference is given to raising cattle and horses.

Ohio county.—Large numbers have been killed for their pelts and tallow; reduction from this cause 40 per cent.

Tyler county.—Four hundred sold out of the State for mutton.

MISSOURI.

Worth county.—Twenty per cent. sold for mutton, tallow, &c., mostly within the State.

Sullivan county.—Three-fourths of all the sheep sold have been for pelts, tallow, &c.

Miller county.—The few sales made were for pelts and tallow.

Buchanan county.—Sheep raising on the decline, but farmers not ready to sell at a sacrifice, prices ranging from \$1 50 to \$3.

Jefferson county.—None sold for pelts and tallow. Many farmers have bought and others are increasing their stock.

Lewis county.—In the western part of the county several hundred killed last fall for pelts and tallow, and some thousands driven from the State, principally for mutton.

Montgomery county.—Only such as are too old to winter well.

Osage county.—Twenty-five per cent. of the stock sold to St. Louis butchers.

Pemiscot county.—Forty per cent. of the sheep sold out of the State for mutton.

Adair county.—Not more than 1,000 head thus disposed of.

Callaway county.—None sold but at good prices.

Hickory county.—Sheep have commanded average prices; and there is a considerable demand for stock sheep.

Mercer county.—Twenty per cent. sold for Chicago markets.

Ralls county.—The few of the Michigan Merinoes which survived the importation into the county were thus disposed of.

ILLINOIS.

Clinton county.—Fifty per cent. more killed for home consumption than usual.

Macon county.—Four-tenths of the sheep have been disposed of.

Madison county.—Some small flocks killed for meat, because found unprofitable.

Menard county.—Number reduced three-tenths by slaughter and shipment for mutton.

Mercer county.—At least 20 per cent. of the sheep have left the State. Everything that would make mutton has been sent to market.

Sangamon county.—Many thousands sold at about the worth of pelt and tallow, to be driven to Missouri and Kansas.

Winnebago county.—Many poor sheep killed early in the winter for their pelts, and their carcasses fed to swine; but the proportion was small.

Boone county.—Many sheep killed for pelts or sold for 75 cents; pelts worth 50 cents; large numbers driven out of the State; one man took 600 to Missouri; a decline of three tenths.

Lake county.—At least three-tenths of the sheep have been killed for their pelts.

Cook county.—Sheep killed for pelts, and many sent out of the State.

De Witt county.—Large numbers sent to market; and farmers have about concluded to give up the sheep business, owing to the low price of wool and the danger from the scab.

Franklin county.—Two-tenths sold for mutton and pelts.

Knox county.—General disposition to sell, in consequence of reduced prices; probably three-tenths sold.

Lee county.—Many died from neglect, and many have been slaughtered.

Logan county.—Many killed for their pelts, and one-third sent to Missouri and Kansas; the number reduced from 70,000 three years ago to 18,000 now; much neglected the past year.

Putnam county.—Some sheep sent out of the State to be kept on shares.

Rock Island county.—Large number slaughtered.

Schuyler county.—Many changed hands at $87\frac{1}{2}$ cents to \$1 per head, and many are being fattened for the butcher.

Du Page county.—Probably one-fourth slaughtered for mutton.

INDIANA.

Spencer county.—A few sheep shipped south for mutton.

Madison county.—Fully one-fourth sent out of the State.

Randolph county.—Flocks reduced one-half.

Du Bois county.—Flocks reduced about one-fifteenth.

Brown county.—Large number of old sheep sent to market.

Boone county.—Much larger number slaughtered than usual.

Union county.—A few for pelts and tallow, and a few for mutton.

Elkhart county.—Flocks greatly reduced by sheep being killed for pelts; carcasses fed to hogs.

Bartholomew county.—Probably one-fourth of the sheep killed for pelts and tallow.

Jennings county.—Probably one-third of the sheep sold for mutton and pelts.

Johnson county.—Flocks reduced one-half; sold for mutton.

Kosciusko county.—About five per cent. of mutton sheep sold out of the State.

Newton county.—About one-half of the sheep shipped for mutton.

Noble county.—Some taken out of the State, chiefly for market.

Warren county.—Flocks reduced three-tenths; sold for mutton and pelts.

Fayette county.—Flocks reduced three-tenths; slaughtered and sent out of the State.

Lawrence county.—Ten per cent. of sheep sold in the fall for the pelts and tallow.

Marion county.—Fully 25 per cent. sold for pelts and tallow, and 15 per cent. for mutton.

Jasper county.—Flocks reduced about one-eighth.

OHIO.

Highland county.—Great many sheep slaughtered for mutton.

Holmes county.—Large number sold for pelts and tallow, at 25 to 75 cents per head; 15 to 20 per cent. of the entire number. Prices have now advanced considerably. Stock, \$2 or \$3; mutton, \$4 to \$6 per head.

Huron county.—Both to considerable extent.

Marion county.—For both purposes; in one quarter of the county extensively; in another, one-half; and in another one-twentieth.

Tuscarawas county.—Sold extensively for eastern markets and for fattening; one-third of the stock; 40,000 pelleted in the county.

Van Wert county.—Large numbers sold for slaughter.

Williams county.—More consumed as mutton than ever before.

Brown county.—Many sold to butchers.

Lorain county.—For both purposes; two-tenths of the whole.

Mahoning county.—About one-twentieth, principally for pelts.

Meigs county.—About three per cent. in northeast part of the county.

Putnam county.—One-fourth of the whole stock.

Ottawa county.—Unusual number slaughtered to supply deficiency in pork.

Shelby county.—Pelleted one-third of the whole, last fall.

Auglaize county.—About three-tenths.

Morrow county.—From one-fourth to one-third killed or sold for pelts last fall.

Knox county.—About 4,000 pelleted last fall.

Stark county.—About 18,000 pelleted in the west end of the county.

Union county.—About 5,000 shipped to eastern markets—the year's increase.

Vinton county.—About 13,000 killed for pelts and tallow.

Ross county.—Many sheep-men in this region are getting rid of their flocks in various ways, in consequence of the downward tendency of wool since the close of the war; the panic is wide-spread, some of our largest sheep owners, however, are wisely holding their flocks, and will reap future profit by such a course.

Hardin county.—One-tenth shipped for mutton.

Muskingum county.—About 25,000 head pelleted.

Medina county.—Flocks reduced one-fifth.

Champaign county.—Probably one-tenth pelleted, and one-tenth shipped to eastern markets.

Harrison county.—Sheep reduced about 75,000 in number.

Jackson county.—Thirty per cent. sold for pelts and tallow.

Perry county.—Flocks reduced 10 per cent.

Jefferson county.—One-tenth killed and sold to go out of the State.

Wyandot county.—Many, who went into the business during the war, have sold their sheep for pelting or to be driven out of the State.

Athens county.—Flocks reduced one-third, in 18 months.

Carroll county.—About one-tenth sold for pelts and tallow; mostly old and thin.

Defiance county.—Flocks reduced two-tenths.

Erie county.—Flocks reduced three-tenths to four-tenths by neglect of lambs and by pelting.

Clinton county.—Flocks reduced three to four per cent.

Fairfield county.—Stock sheep reduced one-half.

Fulton county.—Twenty per cent. of the flocks killed.

Green county.—Three-tenths sold for pelts, and one-twentieth to go out of the State.

MICHIGAN.

Oakland county.—Flocks reduced three-tenths.

Kent county.—Some have been pelted, but more sold at a low price for mutton.

Clinton county.—Some killed for pelts; some sold to butchers at nominal prices; and some sold out of the State. One man sold 400 at one dollar per head.

Ionia county.—About 30,000 slaughtered for mutton and pelts. One buyer purchased 10,000 pelts.

Hillsdale county.—About two-tenths killed or sold out of the county.

Livingston county.—About 20 per cent.

Kalamazoo county.—Probably 6,000 slaughtered in Kalamazoo; 10,000 disposed of in the county.

St. Joseph county.—Few sold for pelts; one-tenth sold out of the State.

Branch county.—Probably one-tenth destroyed in this manner.

Genesee county.—Many pelted, and others sold at nominal prices—20 to 25 per cent.

Ingham county.—About two-tenths pelted.

Jackson county.—Fifty per cent. sold; mostly for pelts, tallow, and hams. Slaughtered, in the city of Jackson, 50,000; exported 10,000.

Lapeer county.—Ten per cent. sold for slaughter.

Lenawee county.—Many thousands killed for pelts and tallow, and hundreds for mutton.

Van Buren county.—Some flocks sold to go west.

Barry county.—Two-tenths.

Berrien county.—A few diseased sheep killed for pelts and tallow; and large numbers sold for mutton.

Ottawa county.—Many old sheep and weak lambs pelted.

St. Clair county.—Large number killed for mutton.

Washtenaw county.—Great number killed for pelts, tallow, and mutton; the latter being sold as low as one cent per pound for inferior class.

WISCONSIN.

Milwaukee county.—Stock much reduced by slaughter, at one and one-half to two cents per pound.

Rock county.—Flocks reduced one-fourth, recklessly.

Walworth county.—About one-tenth pelted; mostly diseased flocks.

Winnebago county.—Few sold for pelts alone; many for pelts and mutton.

Jefferson county.—Stock reduced one-tenth.

Fond du Lac county.—Fifteen per cent.

La Fayette county.—Flocks reduced two-tenths.

Washington county.—A great many sold for mutton; a few pelts, and carcasses fed to hogs.

Waukesha county.—Flocks reduced two-tenths to three-tenths, for mutton.

Buffalo county.—Flocks reduced 25 per cent.

Ozaukee county.—Flocks reduced 30 per cent.

MINNESOTA.

Le Sueur county.—Flocks reduced two-tenths.

Watonwan county.—A large number killed for mutton.

Sherburne county.—Flocks reduced for mutton.

IOWA.

Jackson county.—About 4,000 slaughtered for pelts, tallow, and hams.

Dubuque county.—Fifty per cent. sold to butchers.

Lucas county.—Flocks reduced six to seven per cent.

Jasper county.—Flocks reduced 10 per cent.; a few pelts.

Madison county.—Flocks reduced 50 per cent., by slaughter and sending out of the State.

Pocahontas county.—Stock reduced 10 per cent.

Allamakee county.—Flocks reduced by sale at low prices.

Des Moines county.—Stock considerably reduced. Whole flocks sold.

CONDITION OF THE WINTER GRAINS.

The condition of the winter grains was generally favorable at the date of reports, April 1; in most States considerably above the average of former years. The cold weather of March did some injury to the wheat plants; but the damage from winter killing has been less than for many years, and the promise for a good crop is quite flattering. In the New England States, and in New York and the northwest, snow still covered the ground; but, so far as developed, indications were favorable. In Maryland and Virginia our correspondents represent the prospect as very fine, and from the great wheat-growing regions of the west the reports are almost universally favorable. Kansas has suffered more than any other section from winter killing and from the depredations of grasshoppers. A marked difference is noted between fields sown broadcast and those which were drilled, in favor of the latter, the drilled grain standing the winter much better than the former. The following extracts from the letters of a few of our correspondents in the several States present a fair index of the character of the whole, though about all the unfavorable reports are included:

Genesee county, N. Y..—Wheat 20 per cent. below average condition.

Madison county, N. Y..—Wheat equal in condition to best years past.

Erie county, N. Y..—Wheat looks well, but is not so large as last year.

Ontario county, N. Y..—Wheat above average 10 per cent.

Tioga county, N. Y..—Wheat and rye look well, not winter-killed.

Suffolk county, N. Y..—Wheat 10 per cent. below average.

Steuben county, N. Y.—Wheat 10 per cent. better than last year.

Schuyler county, N. Y.—Wheat looks badly from the effect of cold weather in March.

Niagara county, N. Y.—Wheat better than last year, though not large.

Onondaga county, N. Y.—Wheat looks well, having been covered with snow all winter.

Kings county, N. Y.—Wheat and rye promising.

Dutchess county, N. Y.—Wherever the snow is off, wheat looks better than usual.

Queens county, N. Y.—Grain wintered well, and is promising.

Westchester county, N. Y.—The appearance of winter wheat and rye is not very favorable; much of it supposed to be killed.

Putnam county, N. Y.—Wheat and rye very good.

Union county, N. J.—Wheat injured somewhat by freezing and thawing in March.

Passaic county, N. J.—Wheat and rye a little better than last year.

Essex county, N. J.—Wheat and rye look well, but are not forward.

Burlington county, N. J.—A few weeks of present growth will bring wheat up to the average.

Camden county, N. J.—Appearance of wheat better than for some years.

Westmoreland county, Pa.—Wheat much heaved out by hard freezing.

Tioga county, Pa.—Wheat never better.

Northumberland county, Pa.—Wheat and rye promise abundant harvest.

McKean county, Pa.—Wheat above the average.

Montgomery county, Pa.—Wheat and rye on good sandy soil look well; on heavy land, a little thin from heavy freezing and high winds.

Lehigh county, Pa.—Wheat in good condition; rye badly damaged, frost-killed and rotten under icy snow.

Fulton county, Pa.—Neither wheat nor rye looking well. Seeding late in consequence of wet weather. Early-sown much the best.

Indiana county, Pa.—Winter grains look remarkably well.

Dauphin county, Pa.—Wheat promising two-tenths less than last year; unfavorable winter.

Bradford county, Pa.—Winter grains never looked better than now.

Butler county, Pa.—Not for many springs have wheat, rye and clover looked so well as this spring.

Luzerne county, Pa.—Wheat first-rate.

Lancaster county, Pa.—Wheat and rye as promising as farmers could desire.

New Castle county, Del.—Wheat about average.

Alleghany county, Md.—Wheat very fine; rye in good condition.

St. Mary's county, Md.—Wheat remarkably good.

Queen Anne county, Md.—Wheat stood the winter well, but the severe weather of March was hard upon it, though I think there was little killed.

Washington county, Md.—Wheat very promising.

Rockbridge county, Va.—Wheat promises more than an average yield.

Tazewell county, Va.—Winter grain unusually promising.

Prince William county, Va.—Wheat and rye look exceedingly well, especially where fertilizers were used.

Montgomery county, Va.—The best prospect I have ever seen for wheat and rye.

Chesterfield county, Pa.—Wheat never looked better.

Clarke county, Va.—Wheat in better condition than since 1859.

Nelson county, Va.—Wheat promising, especially the drilled fields.

Louisa county, Va.—Wheat 20 per cent. below last season.

Greene county, Va.—Wheat and rye look better than I ever saw them.
Buckingham county, Va.—Wheat in better condition than for 15 years.
King George county, Va.—Wheat green, vigorous, and promising.
Iredell county, N. C.—Winter wheat and rye look well, and we have the prospect of a good crop.

Harnett county, N. C.—Wheat and rye in average condition.
Monroe county, W. Va.—Wheat injured by bad weather in March, but not materially.

Putnam county, W. Va.—Wheat six-tenths better than last year.
Covell county, W. Va.—Wheat and rye look better than for five years.
Marshall county, W. Va.—Wheat and rye look unusually well.
Brooke county, W. Va.—Wheat in fine condition. Little loss from winter-killing.

Harrison county, W. Va.—Prospect never better for good wheat crop.
Braxton county, W. Va.—Wheat promises well, though somewhat injured by hard freezes.

Lincoln county, W. Va.—Wheat and rye 50 per cent. better than last year.

Taylor county, W. Va.—Prospect for wheat never better.
Anderson county, Ky.—Not so good a prospect for wheat in ten years.
Kenton county, Ky.—Wheat little injured by freezing.
McCracken county, Ky.—Wheat thought to be 100 percent. better than last year.

Trimble county, Ky.—Wheat and rye 50 per cent. better.
Henry county, Ky.—Wheat and rye better than for many years.
Butler county, Ky.—Wheat promises better than for three years.
Spencer county, Ky.—Wheat 100 per cent. better than last year.
Fayette county, Ky.—Winter grain more promising than since 1851.
Smith county, Tenn.—Wheat in fine condition; 50 per cent. above average. There has not been such a prospect since 1861.

Weakley county, Tenn.—Wheat 20 per cent. above an average, and the same increase in acreage.

Robertson county, Tenn.—Wheat in very good condition, and farmers have great hopes of a large crop.

Sullivan county, Tenn.—“I have just returned from a trip down the Holston river to Knoxville, closely observing the condition of winter grain, and I do not remember ever to have seen wheat and rye looking so fine.”

Coffee county, Tenn.—Wheat has almost entirely recovered from the effects of the severe frosts during February, and now looks unusually promising. The Tappahannock is undoubtedly the great wheat for this latitude; it stands the winter better, and is 20 days earlier than other varieties sown at the same time.

Montgomery county, Tenn.—Never saw wheat look more promising.
Hawkins county, Tenn.—Wheat looks better than for years past, with a much larger area than in any year since the war.

Lincoln county, Tenn.—Wheat and rye in fine condition.
Henry county, Tenn.—The cold of January and February was very severe on wheat, but it yet looks well—better than an average.

Greene county, Mo.—Wheat 50 per cent. better than last year.
Dallas county, Mo.—Wheat and rye rather over average.
Newton county, Mo.—Wheat not so good as last year.
Sullivan county, Mo.—Wheat looking beautifully.
Pettis county, Mo.—Early sown wheat looks well. Late-sown below an average, and some fields entire failures.
Schuylerville, Mo.—Winter grain partially killed.

Clinton county, Mo.—Wheat and rye about half frozen out.

St. Louis county, Mo.—Wheat and rye never looked more promising.

Bates county, Mo.—Wheat sown broadcast has heaved out very much; that drilled is looking well; more than one-half drilled.

Boone county, Mo.—Wheat and rye promise well; little affected by the freeze. Drilled grain developed much better than that sown broadcast.

Cass county, Mo.—Grasshoppers destroyed a few fields of wheat, but that sown early is an average, with increased acreage.

Henry county, Mo.—Wheat prospect excellent, large acreage.

Montgomery county, Mo.—Fifty per cent. increase in acreage of wheat. Late-sown much killed out.

Morgan county, Mo.—Wet weather and alternate freezing and thawing have injured late-sown wheat. Early-sown in fine condition. Drilled wheat is in better condition than that sown broadcast.

Marion county, Mo.—Early-sown wheat not injured by the freeze—latesown damaged.

Scott county, Mo.—Wheat in fine condition.

Callaway county, Mo.—Wheat and rye in good condition. Wheat acreage very large.

St. Genevieve county, Mo.—Prospect not so good in a number of years as now for wheat.

Harrison county, Mo.—Wheat never promised better in this county.

Carter county, Mo.—Wheat much above average.

Ralls county, Mo.—Wheat varies from very good to very poor—the larger amount only fair; one-fourth beyond hope of recovery; one-fourth very promising; the remainder in condition to be restored by favorable weather.

Salisbury, Chariton county, Mo.—“I have been over a large part of north Missouri, and from observation find a large area of land sown to wheat. At this date it looks well, and if no mishap occurs, Missouri will this year produce more than twice the quantity raised in any preceding year.”

Marion county, Oregon.—Extensive preparations have been and are making to put in very large crops of cereals this spring, and a larger amount of new and old land has been broken up in western Oregon within the past four months than in any similar period since the settlement of Oregon.

Pawnee county, Nebraska.—Winter wheat and rye look fine.

Riley county, Kansas.—Wheat and rye in excellent condition.

Douglas county, Kansas.—Wheat and rye nearly a failure—winter-killed.

Woodson county, Kansas.—Wheat crop will not be heavy. Many fields injured by excessive wet and frequent freezing. The early-sown looks best. Rye fair.

Leavenworth county, Kansas.—Wheat frozen out badly. Wheat harrowed in on southern exposure is entirely gone. Ploughed or drilled in on same exposure, half killed. Ploughed or drilled in on northern exposure, three-fourths to full crop; and even when harrowed in on the north hill-sides, one-half to three-fourths crop may be expected.

Shawnee county, Kansas.—Wheat falls two-tenths below last year in appearance. Rye an average.

Miami county, Kansas.—Wheat badly frozen.

Nemaha county, Kansas.—Wheat put in early in September with drill will make a good crop. Late-sown broadcast badly killed. Same true with rye.

Republic county, Kansas.—Little winter wheat sown. Nearly all winter-killed.

Marion county, Iowa.—Wheat and rye promising.

Lee county, Iowa.—Wheat and rye as good as I have ever seen.

Allamakee county, Iowa.—Winter wheat looks well, the little that is sown here.

Lucas county, Iowa.—Winter grain looks much better than usual.

Scott county, Ill.—Wheat never looked better. Prospect of immense yield. Much larger area sown than last year.

Effingham county, Ill.—Wheat and rye never looked better.

Ford county, Ill.—Rye looks better than average.

Pulaski county, Ill.—Wheat looking remarkably well.

Macoupin county, Ill.—Wheat looking better than I ever saw it before

Tazewell county, Ill.—Wheat in splendid condition.

Schuyler county, Ill.—Unusually fine condition.

Clinton county, Ill.—Wheat and rye look better than at any time within the last 30 years.

Madison county, Ill.—Area in grain 50 per cent. greater than last year, and crop looking well.

Massac county, Ill.—Best prospect in three years.

Boone county, Ill.—Rye considerably injured by alternate freezing and thawing.

Clay county, Ill.—Wheat unusually good.

Lawrence county, Ill.—Promise for wheat better than during seven years.

Du Page county, Ill.—Wheat injured by freezing and thawing.

Pike county, Ill.—Some late-sown wheat injured, but general prospect good. Acreage increased 30 per cent. Rye in very good condition.

Fayette county, Ill.—Winter grain never looked better.

Cass county, Ind.—Wheat looks better than it has within the last 20 years.

Bartholomew county, Ind.—In quantity and appearance wheat is very much above an average.

Wayne county, Ind.—Wheat is looking unusually well, having stood the winter better than for a number of years.

Grant county, Ind.—Wheat looks extremely well.

Randolph county, Ind.—Wheat and rye never looked better in this part of the State.

Spencer county, Ind.—Condition of wheat and rye probably as good as at any time for ten years.

Boone county, Ind.—Winter grain very much better than usual.

Madison county, Ind.—Wheat and rye never looked better than now.

Brown county, Ind.—Wheat at least 30 per cent. above average condition.

Benton county, Ind.—Wheat never better.

Clinton county, Ind.—Wheat 50 per cent. above average condition.

Delaware county, Ind.—Wheat and rye never more flourishing.

Blackford county, Ind.—Wheat, best for last 8 years.

Marion county, Ind.—Never knew of less damage to wheat by freezing.

Mercer county, Ohio.—Wheat is very good, better than for five years.

Stark county, Ohio.—Wheat looks exceedingly well, and a large breadth sown.

Butler county, Ohio.—“I have lived in this county 60 years, and have never seen a winter so favorable as the last for wheat. It has grown during half the winter, and the same may be said of rye and barley.”

Lorain county, Ohio.—Wheat looks better than for several years past.

Van Wert county, Ohio.—Wheat comes out in much better condition than for years.

Highland county, Ohio.—Wheat was very good until the late freeze in March, which has injured some fields very much.

Fulton county, Ohio.—Wheat much better than last year.

Carroll county, Ohio.—Wheat looks much better than for several years.

Jackson county, Ohio.—Wheat not as good as common; March a hard month on it.

Champaign county, Ohio.—Wheat and rye never looked better than at this time, within my recollection.

Mouroe county, Ohio.—Wheat looks 100 per cent. better than for three years; rye much better than usual.

Logan county, Ohio.—Fine prospect for wheat.

Athens county, Ohio.—Both wheat and rye have suffered severely.

Clinton county, Mich.—Wheat wintered well, but was about one-fourth its usual size in the fall; it is fresh and lively. Drilled wheat looks much better than that sown broadcast, the ridges seeming to protect it from drying winds.

Kent county, Mich.—Wheat is small and thin, owing to the dry fall; it is even, and has wintered well.

Oakland county, Mich.—Wheat and rye better than for the last two years; the plant is small but healthy.

Washtenaw county, Mich.—Wheat and rye promise a fine yield.

St. Clair county, Mich.—Wheat and rye in average condition.

Berrien county, Mich.—From appearances we shall have abundant crops of wheat and rye.

Bay county, Mich.—Winter wheat sown early looks well; late sown looks light.

Leelanau county, Mich.—Wheat and rye look fully as well as at any time during the last six years; prospect of a heavy crop.

Jackson county, Mich.—Wheat and rye in better condition than for 10 years.

Branch county, Mich.—Wheat and rye never looked better.

Livingston county, Mich.—Condition of wheat and rye fair.

Ionia county, Mich.—Wheat was sown late, but is uninjured by the weather.

Muskegon county, Mich.—Wheat looks badly, as it got very small growth last fall.

Carver county, Minn.—Winter wheat and rye look well; winter wheat little sown, though it usually does well here.

Scott county, Minn.—Acreage in rye increased 50 per cent. and condition superior to last year.

Outagamie county, Wis.—Wheat did not make much growth last fall; not so promising as last year.

Jefferson county, Wis.—Rye looks well; no wheat sown last fall.

Crawford county, Wis.—Grain badly winter-killed.

Rock county, Wis.—Rye unusually promising.

Marquette county, Wis.—Winter grain in better condition than last year.

Portage county, Wis.—Wheat and rye injured to some extent by cold and lack of snow.

EXTRACTS FROM CORRESPONDENCE.

DISEASES OF HOGS, ETC.

Lebanon, Kentucky.—Rev. Thomas C. Clelland thus gives his experience: Millions of dollars are lost to this country annually by what is called “hog cholera.” Nine-tenths of this amount could as well be saved as lost. The following facts are the result of long experience and close observation, carefully compared with the experience of our most practical and successful farmers. I readily admit that there are some diseases that swine flesh “is heir to,” whose surest if not only remedy is in prevention; and sometimes even this is impossible.

Pleuro-pneumonia is induced in hogs by sleeping in the dust and wet straw, and by close confinement, followed by sudden exposure. A friend lost his stock hogs by shutting them out from their warm beds in March. Let their beds be warm and changed frequently during the winter. If this disease makes its appearance, the best thing to do is to scatter them as widely apart over the farm as possible. Some persons have kept their sick hogs on a dry lot, with not a drop of water, with apparently good effect. If you are willing to “count the cost,” call in your family physician and tell him to prescribe just as he would were you the patient. Make the prescription in the form of a pill, turn the patient upon his back and drop it in his mouth and close the jaws an instant, until the pill is swallowed. I have known many instances of a speedy cure where all hope was lost. I believe that it remains for science to disclose the fact that this, and all other similar diseases, either in man or beast, are the result of animalculæ or cholera fungi, invisible to the naked eye.

Worms and lice.—If other diseases slay their thousands, these slay their tens of thousands. We clip the following from a public journal:

The writer having for several years sustained a heavy loss by hog cholera, has applied his mind to discover the cause and cure of the same, and now thinks he has gained the victory over the great enemy. By examining the carcasses after death I find they contain an incredible number of worms, and also of lice on the body. After making this discovery I experimented as to how the lice and worms could be exterminated in time to prevent an attack of cholera. The lice were easy to drive with coal oil; to kill the worms I steeped the herb “Jerusalem oak” in hot water until the liquor was very strong. I then mixed corn meal and fed the hogs while in health, which killed the worm before the cholera set up in the system.

No doubt worms and lice, nine times out of ten, are the cause of hog cholera. But I object to the use of the remedy. Never use coal oil. It will “drive the lice,” but will not kill the nits; besides, it is very injurious to the skin, and often kills very young pigs. Soap-suds is just as effective, and far more healthy. Copperas is a far better anti-worm medicine than “Jerusalem oak,” besides being a fine tonic and appetizer. This, mixed with ashes and salt—another excellent vermifuge—will prevent worms and give tone to the system. The best remedy for lice is grease and tar in equal parts stewed together, mixed with a very strong decoction of common tobacco. One application of this will last six months; while warm apply with the hand or mop tied to a rod. Change their beds, and if you have any old tobacco stems let your hogs sleep on them. Lice will kill hogs that are perfectly fat, by getting into their ears, eating into their eyes, and very often prevent hogs from thriving, where they do not kill them outright. The owner wonders why his hogs do not fatten. If you see nits shining thick about the neck and flanks, and great lice crawling all over the body, apply the above remedy; it will save you a barrel of corn to each hog or increase the amount of weight equal to its value.

Last year the writer had a sow with seven pigs; I weaned her pigs; all but one died with lice, and that one I saved by washing it in soap-suds. The sow did not gain a pound in a week; she was restless and wild until I applied grease and tobacco, when she became tame and began to fatten finely. Two years since a friend told me he was losing all his hogs with the cholera; two or three died each day. I asked to see them; they stood with their heads down, eyes sore, heads swelled, &c. As they were too weak for the application of tobacco, I advised a bath in strong, warm soap-suds. This would kill the present crop of lice. He saved every one.

The model farmer of our county told me he had lost several hogs. He found that, in cutting in two the smaller bowels, sometimes he would kill five or six worms. Another friend was losing his little pigs; he found their ears full of lice; otherwise perfectly fat and healthy. The most successful breeder of swine in this State gave me the result of sixty years' experience:

I prefer my pigs should come in the middle of February. I prepare a long row of square rail pens, one to each sow, fronting south, just high enough for her to stand under; the eves of her shed to reach the ground on the north side, to keep off cold winds. I fill the bottom of the pen with good dry straw, and train each sow to wait before her own door for her regular rations. I never let my sows with young pigs run on green clover, rye, or oats. Wheat or blue grass will not hurt them, but the native woods are preferable to either; clover, &c., will produce worms. In the spring, when I mark them, I prepare a tub of strong warm soap-suds, into which I put a quart of grease and a quart of tar, and a decoction of two pounds of tobacco. Into this I immerse the shoats; they are never troubled with lice afterwards. To keep off worms I feed once a week on ashes, (say one gallon to 50 hogs,) with one pint of salt, mixed well with a quarter pound of copperas. My hogs never have the cholera, though I send five or six hundred to market annually. In feeding I never surfeit my hogs. I give them just what they can eat, but none to waste. I prefer to see them rise up with avidity to receive their daily meals.

In conclusion permit me to say that these facts and suggestions have been collected and prepared with great care, and I know they are worthy of consideration by every one who would be a successful breeder of swine. If some trouble and pains are involved in the application of the above it will repay an hundred, and, in many instances, a thousand fold.

Gowdysville, Union county, South Carolina.—I had some pigs die in the following manner: They were in fair order and thriving finely; were fed on corn, wheat bran, and had access to a clover lot occasionally; age two months. They became droopy and sleepy-looking, and then in a short time died. The first one which became sick threw off from its stomach food which had become sour—this one recovered. I cut open the largest and fattest of those which died and found its stomach crowded with corn which had become sour, but would not digest; they had lice on them. But some hog-raisers say lice will not kill fat pigs. They had access to a few cotton-seed which were daily dropped from the cow-troughs, the quantity being small. It is generally said that raw cotton-seed will kill hogs. If so, how do they do it? Is there anything about the oil that affects the digestive organs? Or will lice on young pigs stop digestion? I rubbed the pigs with kerosene, and took them from the seed, and since that time have lost none. All the pigs that died seemed to have digestion stopped suddenly, one or two days before death, otherwise they appeared sound and healthy inside. Any information you may have on this subject will be thankfully received.

[Probably the hogs had too much clover, and this may have been the commencement of their sickness, as much clover breeds worms; but the fact of their being infected with vermin is sufficient to account for their falling off and general indisposition, as no animal upon which lice abound can thrive, and the younger the animal the more it suffers from ver-

min. The cotton seed could not have done the animals any harm; the oil of the seeds is nutritious and fattening. Cleanliness and disinfection of the animal's coat is the true preventive; weak lye, soap-suds, tar and soap wash or carbolic-acid soap are the best substances to disinfect and clean the skin.]

Keweenaw, Henry county, Illinois.—About 18 months ago the hog cholera made its first appearance in this vicinity. One man lost 150 hogs, (all he had;) another 50, and several others smaller lots. While passing one of my near neighbors one day he told me that his hogs had been dying at the rate of two and three a day for four days, and he showed me one which he said would be dead in two hours: the animal was then going about quite lively, but was a little purple about the legs. That morning he gave them some of the medicine described below, and lost no more hogs, though when he commenced there was not a well hog in his lot of 38. Another neighbor's hogs, 15 in number, took the disease and were all sick. The first day he got some medicine, and they all got well in a few days; others used it with the same result. I could send the testimony of these men, but it is unnecessary. The receipt is as follows: Sulphur, 2 pounds; copperas, 2 pounds; madder, 2 pounds; black antimony, $\frac{1}{2}$ pound; saltpetre, $\frac{1}{2}$ pound; arsenic, $\frac{1}{4}$ pound. This quantity is intended for one hundred hogs, in doses of one pint, night and morning, mixed in bran or slop of some kind that the hogs will be likely to eat. It is well also to change hogs upon clean ground. A good preventive is to keep the pens clear of manure and all other filth, and have them as dry as possible. It is a great mistake that it is good for a hog to have mud and filth to wallow in; like all other animals he will do best by being kept as clean as possible.

CHICKEN CHOLERA.

Anne Arundel county, Md.—Chicken cholera has prevailed very generally, carrying off fully one-half of all the chickens in our section.

Warren county, Tenn.—We are now visited almost annually and continually with chicken cholera, for which we have found no specific. Last year I lost my whole brood twice. We have used every precaution and every remedy that promised success, but without avail. They would contract the disease, and at least 80 per cent. died.

Lincoln county, Ky.—A disease among turkeys and chickens, killing great numbers, sometimes all on the farm.

INSECTS.—ENGLISH SPARROWS.

South Vineland, Cumberland county, N. J.—Our "insect enemies" are the greatest drawbacks we find in fruit raising. If the Department could find any means for exterminating them the benefit would be incalculable. A few pairs of English sparrows will be set loose in our town this season, and a regular crusade against the insects is to be inaugurated with dishes of sweetened water, and blazing fires by night. We can scarcely expect a great increase in the number of our best friends, the birds, while we harbor their worst enemies, the cats.

Montgomery county, Pa.—Fruit is almost entirely neglected in our county owing to the destruction wrought by insects. Some very fine specimens of pears have been raised, and grapes have also been cultivated to some extent and very fine samples of wine produced. Agricultural societies in eastern Pennsylvania have lately passed resolutions favoring the project of importing insect-destroying birds, and in that manner rid our fruit and shade trees of the insects that annually destroy

both fruit and leaves. That the idea is a good one we do not doubt, and have every reason to believe that it will be speedily carried into execution.

CHEESE-MAKING IN NEW YORK.

F. B. Morse, secretary of the Lewis County, N. Y., Agricultural Society, furnishes the following statement of the Leyden Cheese Association for the year 1868 :

Milk received at the factory, 1,660,144 pounds; cheese made, 181,517 pounds; cured cheese sold, 170,246 pounds; shrinkage, 11,271 pounds; proceeds of sale of cheese, \$25,959 60; average sales per 100 pounds, \$15 32. Milk required for one pound of green cheese, 9.14 pounds; milk required for one pound of cured cheese, 9 $\frac{3}{4}$ pounds; milk required for one pound of green cheese in May, 9.56 pounds; in June, 9.32 pounds; in July, 9.65 pounds; in August, 9.36 pounds; in September, 8.59 pounds; in October, 7.84 pounds. Number of cows, 552; hogs at the factory, 90.

The First Farmers' Association of the town of Rushford, Allegany county, in its fifth annual report, makes the following statement of the operation of its cheese factory for the past year, the establishment having been run night and day for four months of the season:

The whole number of pounds of milk received for the season was 3,720,515; manufactured into pine-apple cheese, 490,818 pounds; boxes of cheese sold, 4,798; pine-apple cheeses sold, 9,156; five-pound fancy cheeses sold, 1,241; cured cheese sold, 390,940 pounds. Cows from which milk was received, 1,138; average number of cows for the season, 831; average number of pounds of milk per cow, 4,477; average number of pounds of cheese per cow, 471. Total amount received by the committee, \$61,397 12; of which \$54,298 05 was paid to farmers; \$6,763 70 paid for manufacturing; \$300 paid to the committee, and \$35 37 for incidental expenses. Milk required for one pound of cheese for the season, 9 $\frac{1}{2}$ pounds. Average amount received per cow, \$73 88; average net amount paid farmers per cow, \$65 34; average price of four selected dairies per cow, \$75 51. During the season there were 15 sales made, and the lowest price received was in June, 14 $\frac{3}{4}$ cents per pound; and the highest in August, 18 $\frac{1}{2}$ cents; average price for the 15 sales, 16 1-10 cents; average price received per pound was 15 7-10 cents.

PROFITS OF AYRSHIRES.

Baltimore county, Md.—Our correspondent wonders that farmers should be so dilatory in improving stock, and states that it costs \$400 to raise 10 common cows worth \$600, affording a profit of \$200; while 10 Ayrshires cost no more, and sell for \$1,000, or \$600 profit.

YIELD OF MILCH COWS IN PENNSYLVANIA.

Montgomery county.—Cows which are not good milkers are sold yearly from dairy farms for butchering and replaced with better stock. It is held that cows not yielding 1,500 quarts will not pay, and 2,000 quarts per annum is not a large estimate for good cows.

INDIANA.

Dearborn county.—The southern portion of this county, bordering on the Ohio river, below the mouth of the Great Miami, is widely known as the best corn land, its average value being not less than \$150 per acre, without any improvements. The uplands and hill-sides yield excellent crops of hay, wheat, barley, sorghum, and potatoes. Grape culture

is practised to some extent, the Ives Seedling taking the lead at present. Our peach orchards in ordinary years yield a surplus over home demand. Pears were more plenty than apples in our immediate neighborhood last fall, and sold for \$2 per bushel on an average. Fruit culture receives more attention every year.

Sheep raising has experienced a new impulse hereabouts, especially as to fine-wooled sheep, owing to the great success of the Lawrenceburg Woollen Mills, one of the most complete and extensive manufacturing establishments in the country, and the first one of its kind in this section, making none but the finest cassimeres, a large quantity of which finds ready sale in the eastern markets.

WHEAT AND FRUITS IN NEW YORK.

Genesee county.—The Tappahannock wheat has proven quite an acquisition. The principal objection to it is its short straw. Diehl wheat is the most popular variety of white wheat now grown here; it proves to be very reliable. This is emphatically a wheat-growing section. The crop last year was somewhat below the average yield, but the acreage was much larger than usual. Red wheat averaged 18 to 20 bushels per acre; white wheat from 20 to 25; Diehl wheat in many instances as high as 35 bushels and over. Probably $\frac{3}{4}$ of last year's crop is in the hands of the producers now. Price, \$1 40 for red, and \$1 50 for white. One of our leading millers and buyers told me a few days since that there was $\frac{1}{2}$ or 25 per cent. more wheat in the county than he ever knew before.

There is a large extent of land set in orchards; some farmers having from 25 to 100 acres of apples. The trees mostly cultivated are the late-keeping varieties: Russets, Baldwins, Greenings, and King apples. There are a great many pear orchards, but few have realized expectations. Grapes are cultivated quite extensively, (mostly Isabella,) but for the past three years have not ripened well. There is a large quantity of potatoes through this county, very few having sold in the fall. They are now worth 40 to 50 cents per bushel.

EXPERIMENTS WITH SEEDS.

Austinburg, Ohio.—The Poland oats received from the Department of Agriculture yielded about fifty-fold, while the common variety produced only about twelve-fold.

Sibley, Minnesota.—The New Brunswick oats received from the Department of Agriculture yielded 45 bushels per acre, and averaged 47 pounds per bushel.

Burlington, Iowa.—From a sample of the Tappahannock received from the Department I raised 100 bushels at the third sowing; it brought \$4 per bushel, when sold for seed.

Marshall, Michigan.—From a package of the Potato oats received from your Department I raised from the second year's sowing 200 bushels of fine, sound oats, weighing about 45 pounds per bushel. I consider one bushel worth two of the common oats, which weigh from 28 to 32 pounds per bushel. I regard them as a very decided improvement on the common oats cultivated in this section of the country.

Hawkins county, Tennessee.—Of the Tappahannock wheat, sent in 1866, a half gallon produced ninety-fold, and the second crop was also very large. From that half gallon, crops of from 2 to 20 acres are now growing on 8 to 10 farms. The seed of this variety should be sown early.

COTTON, ETC., IN ARKANSAS AND GEORGIA.

Arkansas county, Ark.—I was made to say, in your November and December report, that the average product of 1867 was less than 200 pounds of lint per acre; “this year the *average* is less.” It should have been, “the *acreage* is less,” as I put the crop of 1868 at 15, which would be 300 pounds lint to the acre. In this I was below the amount, principally from the fact that the return of lint from the seed was much better than in 1867. My crop was about 200 pounds lint per acre; but it was much below the average on account of causes which I could not control; principally from late planting, on account of high waters; next, it was mostly on the black land, which suffered very much from the rains of August and September; still my product was over the average to the hand on the river, as I made seven bales cotton, 266 bushels corn, 16 $\frac{2}{3}$ bushels wheat, and two tons of hay to the hand, one-third of whom were women. My land in cultivation was 12 acres cotton, seven of corn, one and a quarter of wheat to each hand; cultivated mostly with the Buckeye cultivator, as labor is scarce and land plenty. I had a notion that by planting my cotton in checks, four feet by four, I could cultivate more land to the hand, and make as much per acre as by the drill plan, and after one year’s trial I have no reason to doubt my judgment. One of my croppers made, on three and nine-tenths acres, planted four by four, 1,676 pounds of lint, including weight of bagging and ties, or 1,556 pounds of lint, and, as he was late in gathering it, much was lost.

I am satisfied that the sulky plough can be used to great advantage on all our places that are free of stumps.

I see a tendency in some of your southern correspondents to speak very despairingly of the mode of culture in the south. My impression is that the cotton lands in the Mississippi valley were, before the war, the best cultivated lands in the United States, size of fields taken into consideration. We bought the best ploughs that we could find, and the best teams, and used every exertion to procure the most productive seed, and invariably laid aside all our tools when we found better. I much doubt if it will ever be equalled again. Our crops average 10 bales of cotton and plenty of corn and vegetables to supply the place for each hand, counting all names on the plantation books that went to the field that were over 12 years or under 45.

If you could induce Congress to tax all dogs it would enable the South to raise on an average 50 sheep to each family, with little or no cost. Before the war I had a flock of 700 sheep, that did not cost me more than \$150 for all feed and attention. It is strange that no legislative body will give us the protection we ought to have.

Most of our lands for 1869 will be cultivated on shares, the planter furnishing land, teams, and implements, the laborer to find himself; some hands pay one-half the expense of feeding mules. Our planters are not very sanguine of a good crop, as the hands don’t work as well as last year, and in many places there are not enough hands if the season should prove rainy. I look for a repetition of the role of 1866; still I may be mistaken.

McIntosh county, Ga.—Cotton-planting is now commencing under better auspices than for several years. The freedmen in this county conduct themselves well, as they have usually done; are quite contented, and are returning to the employ of their former owners, who are now able to raise a little credit to hire labor on a small scale and buy fertilizers. It is not probable that there will be more or even as much cot-

ton planted as formerly, but I trust it will be better tended, and yield more than ever, provided we have no more caterpillars. I presume the corn crop will be about the same. Fences have been made and repaired, and seeds are now going into the ground.

MARKET GARDENS AND ORANGE ORCHARDS IN FLORIDA.

Putnam county, Fla.—This portion of the State, bordering upon the St. John's river, is being rapidly converted into market gardens, and, so far, this project has been attended with very flattering success. The past winter has been one of unusual severity, the cold weather lately experienced being without precedent since 1835. On Christmas morning the thermometer sunk to 18° Fahrenheit, fourteen degrees below the freezing point; and again on the 1st of March it sunk to 26°, six degrees below the freezing point. It was feared that the orange trees would be killed by the freeze of Christmas, but happily the injury done was very slight. The crop for this year will be fully up to the average. The freeze of March 1 did some damage to early vegetables that were exposed, such as tomatoes, cucumbers, beans, &c. Since then, however, the weather has been warm and in all respects favorable to vegetation, so that the crops will be quite as early as in any previous year. Tomatoes and cucumbers are in bloom, and potatoes are nearly ready for market.

CASTOR BEAN, RAMIE, ETC., IN TEXAS.

Goliad county, Texas.—Before the emancipation of our slaves we relied upon cotton for our main support; since then we have raised some more than we could get picked. The caterpillar came to destroy the best part of the crop, and our planters have no longer any existence. They are now small farmers, raising enough to feed their hogs and make their bread; raising broom-corn to supply the country with brooms, and raising all the minor articles, such as before the war were bought from the north or northwest. This year, however, considerable attention is given to the castor bean. Hundreds of acres are planted or will be planted. Our soil is prolific, and in some instances has already yielded 60 bushels of castor beans to the acre. As yet we have no machinery in this county for getting out the oil, but in an adjoining county there is one of small power, whilst in Gonzales, about fifty miles distant, there is a steam-engine of great power and all the apparatus necessary to the manufacture of oil.

The ramie plant is beginning to attract attention; it has been tried by myself and others on a small scale, but sufficiently for me to say that it stands the climate well. In summer it stands the heat as well as cotton. I had it growing side by side with cotton, and am fully satisfied that it will bear all the heat and drought that cotton will. In winter cotton dies, being killed by the frost. Ramie is killed down to the ground by frost, and as soon as the frost is over the plant puts out again, and so will continue to do under repeated frosts; although we have passed through, for us, a cold winter, still the roots of the ramie have not been injured in the least. I look upon this plant as of great value to the south. If it would make nothing but ropes, it would be a crop that would pay splendidly; and, in addition to its value, it is a good lazy man's crop, for it does not need the labor consequent upon a crop that needs replanting. How many years it will do without replanting, I do not know; but this is the second year for my small experiment, and it is coming up thicker and stronger than last fall.

Our stock interests are passing away rapidly. So many are depredating upon not only beeves, but also stock cattle, that, unless this thieving is arrested, in a few years the stock interests will be no more. We want laborers here. Our fertile fields are in many instances lying idle, the fences going to decay.

Rusk county, Texas.—There is an increased disposition among the freedmen to cultivate the soil. Not so many idling about the villages; in fact, they are fast learning that indolence and politics will neither feed, shelter, nor clothe them. Some are working for wages, while many are cultivating on shares, the plan of cropping and mode of cultivation being usually directed by the whites, which seems necessary to success. An increased breadth of cotton will be planted, affording just ground for fears that the grain crop will be too much overlooked in the cotton region. On the whole, both whites and freedmen are reaching a just appreciation of their true positions, respectively, so necessary to the prosperity of each.

Small farms, thorough cultivation, and manuring to a high point, are now the topics of our best informed farmers. There is a great desire to obtain suitable labor-saving agricultural implements. Here is a rich field for the manufacturers of such articles suitable to the country, and not of too costly a character.

This part of Texas being timbered, and mostly of a soft, fine, loamy soil, quite fertile and free from rocks, offers rare inducements for homes in a country of cheap lands, good water, a mild and salubrious climate, where the farmer can labor at all seasons of the year, and grow almost every product necessary either for sustenance or luxury.

FOREST TREE CULTURE.

Adair county, Iowa.—Timber-planting is receiving some attention in this section, and its rapid growth is very encouraging. A settler in the southern part of this township (Richland) planted a small grove of cottonwoods ten years since, which are now fine trees, 30 to 40 feet high, and one of them measures more than two feet in diameter one foot above the ground.

Gunnison, Sangrete county, Utah.—We have no forests in the valleys of the Rocky mountains, but scattered cottonwoods, and in the mountains no hard woods except dwarf oaks, mahogany, and maple, and near the rim of the basin, dwarf ash. In the valleys, along the rivers and creeks, cottonwood, thorn, and willows are generally to be found, but the climate is too dry to favor forest-growing without irrigation. The dwarf hard woods are not fit for timber, hence we are compelled to get our supply from the east, 1,200 miles distant. Our farmers' club intend experimenting with various hard wood trees, as we believe their cultivation practicable in the valleys where irrigation is applied until the trees shade the ground.

THE CLINTON GRAPE IN IOWA.

Maquoketa, Jackson county, Iowa.—After ten years' experience I am convinced that the Clinton is the best grape for this latitude, as was fully proved last season. The preceding winter had been very dry and bare, with but little snow, and the ground was frozen deep. When the spring opened I found that half the Concords were dead, half the Isabella, two-thirds of the Delaware, and half the Hartford Prolific; in fact more than half of all the downy-leaved varieties were winter-killed,

while those remaining alive looked sickly all summer, and it remains to be seen how these will come out the ensuing spring. The best care was taken of all, being covered alike; but the Clinton alone came out unscathed, not one stalk being lost, and all looking as thrifty as ever. Young two-year-old roots of the Clinton I did not cover at all; in the spring they were transplanted and showed as vigorous growth as ever. As with the Clinton so I found it with the other green-leaved varieties as well. The Clinton is a prolific bearer. A root two years old, and others two years' growth as a stock, bore the last season 84 bunches, averaging four bunches to the pound—21 pounds, worth here 10 cents a pound.

STOCK IN CALIFORNIA.

Mendocino county, California.—It is impossible, in California, to arrive at any correct average of the value of horses or mules. There are a large number of "California" horses, which uniformly range at a low price; for three years old and upwards, not exceeding \$12, perhaps not more than \$10. A few of these horses, however, have been broken to harness, and become quite useful. These range at from \$40 to \$70. But during the last five years our people have given much attention to the work of improving their stock of horses. Half-breeds, bred from good stock, attain more than double the value of the original inferior stock. But there are some good mares bred to good horses, and those take a high position in our markets; a good thrée-year-old filly is worth from \$150 to \$250, owing to her size and action; geldings, about the same, while good stallions are sometimes worth \$1,000. It is much the same with mules. The old stock are mostly small and inferior—suitable only for packing, while many of the young ones are large, fine animals.

While we are vastly improving our cattle, the difference in them does not take so wide a range. The old California stock has nearly disappeared, and we seldom see anything but "American" or half-breeds.

Hog-raising is an important branch of enterprise in Mendocino county, and now is a source of much profit, with a prospect of continuing so for some years to come. But our specialty consists in sheep, in which some of our citizens have largely invested, and are exercising much care to import improved stock. Mendocino county, with her hundreds of thousands of acres of semi-fertile hills and mountain slopes, is peculiarly adapted to the rearing of healthy sheep. Our climate, too, is favorable to this enterprise, and we predict that the day is not far distant when she will rank high among the wool-growing districts.

AGRICULTURE IN MONTANA.

Gallatin county, Montana.—The cultivated portions of Montana lie between 45° and 48° north; the growing seasons, in consequence of the elevation, being shorter than in the same latitude in the Atlantic States. Most of the small grains, however, mature to perfection, and with immense yields, in some instances in Gallatin county as high as 80 bushels of spring wheat and 60 of winter being obtained per acre, the average being 35 bushels throughout those portions best adapted to the raising of grain; and 50 bushels of oats and of barley per acre is common; oats weigh very heavy, from 48 to 50 pounds to the bushel struck measure. Wheat is also of an extra quality, there being no lack of that which will flour an XXX brand, and equal to the best St. Louis brands. There is a great variety of soils, the best for grain-raising being loamy, very warm and quick, and containing a large amount of lime in solution,

being therefore very durable. This soil is confined to the creek and river bottom lands. In producing the heavy yields above referred to no extra cultivation was added. The grain was sown (90 pounds to the acre) broadcast, and harrowed, in a rather hurried manner. Beds of sand and gravel underlie the soil at the depth, generally, of eight feet, and it never seems to suffer for want of drainage.

It is fast becoming an established fact that the best table potato may be grown in Montana. But of all varieties, whether of grains or vegetables, the earliest varieties are most successful.

Corn so far is not a success, except, perhaps, in very limited portions of the Territory, the nights being too cold, tending to check its growth and maturity. Garden vegetables, which are not *too tender*, (in reference to frosts,) do exceedingly well.

All the valleys and immense mountain slopes and foot-hills are literally one vast pasture, covered by nature with the richest bunch-grass. Fine beef is made by grazing cattle on these grasses alone. As a stock-raising country these valleys are not surpassed by any portion of the American continent. These portions are exceedingly well supplied with water from the numerous springs and mountain rivulets, and almost, without exception, of the purest waters.

The banks of the streams are usually skirted with timber. But aside from this the mountains and mountain spurs contain an inexhaustible supply for building and lumber purposes. There are numerous mills both for lumbering and flouring purposes. The agricultural resources of the Territory are ample to supply the population of an ordinary State, yet a still greater resource in its adaptability to the raising of stock. Irrigation has to be resorted to in most parts to produce crops of either grain or vegetables.

THE SOUTH COAST COUNTRY OF CALIFORNIA.

Mr. A. S. Taylor, of Santa Barbara, California, writes as follows:

Since the spring of 1867 the coast country of California, between San Diego and Monterey, has experienced a great change from its former dullness and apathy, and the population, from all reports, has been more than doubled. In the spring of that year a large immigration from the northern section of the State, and from the Atlantic States, consisting of steady farmers and mechanics, with their families, teams, and tame stock, has come in and bought land in large quantities, and given an entirely new life to this long-neglected portion of the republic, which, within its own confines, covers as many square miles as the entire State of Pennsylvania. Within this short time as many as 50,000 new settlers have established themselves in the country mentioned, and the old Spanish grants, measuring by the league, have been nearly all transferred to capitalists, speculators, and small purchasers, and the prices advanced, in many cases, 400 per cent. Speculators are now selling off with great profit to themselves, as well as benefit to the public interests, State and national. Large numbers have made their homes in Santa Barbara, Los Angeles, and San Diego, on account of health, as the climate is not only one of great salubrity, but is extremely pleasant and agreeable, and admirably fitted for a sanitarium, for such as labor under pulmonary complaints, old fevers, rheumatisms, indigestion, and chronic derangement of the bowels, the diseases of women and children, and those bodily ailments which the art of medicine fails to conquer. There is no doubt that when the Pacific railroad is opened, and hotel accommodations are properly established, this portion of California will attract large numbers of visitors from the Atlantic States, Europe, and India, for the purposes of health, pleasure, and recreation. No district of country on the western continent surpasses it in salubrity and picturesque scenery, and it is bounded in its whole length by the breezes of the Pacific ocean, which, with the dry, pure atmosphere, completely neutralize all malarious poisons in the soil; indeed, the land is so declivitous that no swamps can be found, and little room for mosquitoes or fevers.

Not only has the new emigration greatly extended the cultivation of the grape, fig, orange, and other sub-tropical fruits, but all the old vineyards and fruit gardens have been made prosperous and more reliable, and it is probable that, from the cheapness of California wines, spirits, and fruits, a home market will be formed, and the people in this portion of the republic consume their tons of fresh and dried fruit and thousands of bottles of wine daily; and the men who inhabit the Pacific States will soon be enabled to get their wine as

cheap and as good as do the people of Italy, France, Austria, or Spain, to the great benefit of the revenue and prosperity of the country.

The seasons of 1865, 1866, 1867, 1868, and 1869 have done wonders for this portion of the country, and as seasons appear to go in meteorology by cycles, there is a good prospect that there will be a continuance of the same for 10 or 12 years, when there will be enough inhabitants in this part of the State to effectually counteract the phenomena of dry years by the completion of irrigating works, for which the formation of the country is admirably adapted.

It is estimated by residents of 20 years' standing that four times as many fruit trees have been set out in southern California in the last two years as in any two years since 1850, and at least ten times as much land fenced and cultivated as anterior to 1867, and which has required some 6,000,000 feet of lumber from the mills north of San Francisco to satisfy the augmented demand, giving a new stimulus to the lumber trade, of the North Pacific. This country has always produced wheat, barley, oats, &c., of the best quality, since 1780, and as soon as all the improvements in agricultural machinery are set going, this section is so close to the sea that these staples of commerce can be as cheaply grown as around the bay of San Francisco, if not cheaper, and much more so than in the region of the great lakes or the north Mississippi States, the farming lands lying within from one to ten miles of shipping ports. There is no record of any dangerous hurricane or wind for 100 years, or since 1769, on all the coast from Monterey to San Diego, and for ship anchorages it may with justice be termed a stormless shore; the few vessels lost in that time being traceable more to bad charts and bad sailors than to bad weather.

CROPS IN UTAH.

Springville, Utah county, Utah.—About one-fourth of the wheat, barley, oat, and corn crops was destroyed by locusts the past season; some farmers lost their entire crop. The potato crop was good. The sorghum was not injured by the locusts, there being manufactured in this place 10,760 gallons of excellent molasses this season. The vegetable seeds received from time to time from the Department have succeeded well.

Preparations on an extended scale are being made for the production of silk. Many thousands of mulberry trees will be planted in the spring.

The California grape is in general cultivation here and fruits well, but has to be laid down and covered in winter. The hardy kinds, such as the Clinton, Catawba, Concord, Isabella, Delaware, Iowa, and Israella, grow thrifitily, but have not fruited much yet. We raise excellent fruit, such as the apple, pear, plum, apricot, peach, and cherry, which are free from injury by insects.

WOOL ON HAND.

The following estimate of the amount of wool unsold April 1, 1869, is obtained by deductions from the county returns:

States.	Pounds.	States.	Pounds.
Maine	145,000	Texas	188,000
New Hampshire	143,000	Arkansas	11,000
Vermont	540,000	Tennessee	74,000
Massachusetts	46,000	West Virginia	178,000
Rhode Island	43,000	Kentucky	264,000
Connecticut	75,000	Missouri	484,000
New York	2,516,000	Illinois	849,000
New Jersey	26,000	Indiana	338,000
Pennsylvania	820,000	Ohio	1,381,000
Delaware	2,000	Michigan	870,000
Maryland	91,000	Wisconsin	519,000
Virginia	134,000	Minnesota	5,000
North Carolina	97,000	Iowa	538,000
South Carolina	27,000	Kansas	45,000
Georgia	54,000	Nebraska	8,000
Alabama	35,000	Total	
Mississippi	75,000		
Louisiana	37,000		10,711,000

DEATH OF B. P. JOHNSON.

The death of Benjamin P. Johnson, for 22 years the efficient secretary of the New York State Agricultural Society, and the laborious and successful editor and compiler of the New York Agricultural Reports, is thus announced by his successor:

NEW YORK STATE AGRICULTURAL SOCIETY,
Albany, New York, April 16, 1869.

SIR: With deep regret I have to announce to the Department the decease of the venerable Benjamin P. Johnson, which took place at his residence in this city on the 12th instant.

The exalted character of Colonel Johnson and his services to the cause of agriculture are known so well by the honorable Commissioner that it is unnecessary to attempt his eulogy at this time. The society has committed that duty to the honorable Lewis F. Allen, of Buffalo, an ex-president of the society, who will be able to do justice to the subject.

Mr. Johnson was born at Canaan, in Columbia county, in this State, November 30, 1793, graduated at Union College in 1813, studied for the profession of the law under the Hon. Elisha Williams, at Hudson, and practiced for many years at Rome in this State. He represented Oneida county in the assembly of the State in 1827, 1828, and 1829, was president of the State Agricultural Society in 1845, and on the 22d day of January, 1847, was elected secretary of the society, which office he held until the election in February last, when he resigned the active office of corresponding secretary and accepted the position of recording secretary. Mr. Johnson was commissioner to the international exhibitions at London in 1851 and 1862. His remains were interred at Rome on the 15th instant.

I have the honor to be, very respectfully, your obedient servant,

T. L. HARRISON, *Secretary.*

Hon. HORACE CAPRON,
Commissioner of Agriculture.

THE "SPARTINA" FIBRE.

The dearth of paper material has threatened to prove a drawback to the spread of general intelligence, and a hindrance to educational progress. In Europe a new material has been adopted, or rather a very ancient fibre has been utilized by the adaptation of paper-making machinery, until a large portion of the paper made, both wrapping and printing, is of this fibre—the esparto grass of Spain and Algiers. Seventy thousand tons are annually brought into England, and a large quantity into France. It has also been imported into this country, and its acclimation is in process of experiment in the south.

Other fabrics, native to this country, are in use here to an increasing extent, among the most promising of which are the bamboo cane of the south, and the "cord grass" of the west. This "cord grass" (*Spartina cynosuroides*) is quite abundant in the low river bottoms, and in tracts of marshy land throughout the northern States. It is easily recognized by its long bristly one-sided spikes, flowering in August. The peculiar toughness of its fibre warrants the use of its common name, "cord grass," the living stem of which is very difficult to break. It grows to a height of three to six feet, covers extensive tracts of land, and yields a very heavy crop, which is so easily cut and carried to market that it has been sold for five dollars per ton. The cost of production not exceeding that of the poorer quality of wild hay, and the extent of area united to its growth being practically unlimited, thorough experiment should be made in testing its value for newspaper material. Its successful use in the manufacture of wrapping paper warrants further investigation into its adaptation for higher grades of paper.

The following letter, in answer to a recent inquiry from this Department, is from a manufacturer who has successfully used hundreds of tons of it:

QUINCY, ILLINOIS, April 15, 1869.

SIR: I have the pleasure to acknowledge the receipt of your letter of inquiry in reference to the "marsh or cord grass" as a fibre for the manufacture of paper, and in reply would state that this grass is known among botanists as "*Spartina cynosuroides*." It grows wild upon the inundated bottom lands of the Mississippi river, the most northern limit of its growth extending nearly to Burlington, Iowa, and its southern limit being about the confluence of the Illinois with the Mississippi river. The territory yielding the greatest quantity and the best quality, is found in the bottom lands of Adams and Pike counties, in Illinois, and Marion county, Missouri. In these localities there are vast tracts of lands on which can be cut from two to four tons of this grass per acre. It grows from three to seven feet in height, and when cut early makes very good hay for cattle and horses. Its roots are strong, branching, and near the surface, and each stock grows separate, springing from an eye or pointed protuberance on the root. There are no joints in the stalk, it grows very erect and stiff, and the stalk is formed by the circular overtapping and compression of the leaf, like the banana. I have used many hundred tons of this grass in the manufacture of wrapping paper. It is much superior to straw, yielding, when properly treated, a much stronger, longer, and softer fibre, and a much larger percentage of stock. Its cost, delivered at my mill, during the past two years, has been about \$5 per ton.

My mill has a capacity for making two and one-half tons of paper per day. Has been running about 18 months, and I have used this grass almost entirely for stock. I know of no other paper-makers who use it, and paper-mills are few in the vicinity in which this grass grows.

Experts in the manufacture of paper, who have worked in mills in England, where large quantities of esparto grass is used, and which is imported from Spain and Portugal, have examined this grass and pronounce it a better material for paper stock than esparto.

The later this grass is cut the better it is for paper stock; that cut in September or October is the best. Experiment shows that it bleaches quite as readily as straw, and those experienced in the manufacture of printing paper express themselves as satisfied that printing paper can be made from it, fully equal in quantity, and difficult to tell from that made from rags, and so certain am I of this that I am now endeavoring to enlist a little additional capital for the purpose of converting my mill into a print and book paper-mill, and use the grass entirely as stock.

The production of this grass is almost unlimited in this vicinity, and the land on which it grows is almost valueless for any other purpose, being subject to annual inundation of from two to four feet in depth.

Very respectfully, your obedient servant,

JAMES WOODRUFF.

Hon. HORACE CAPRON,
Commissioner of Agriculture.

RAMIE, OR "CHINA GRASS."

A communication has been received from Charles Frederick Dennet, Boulogne, France, under date of February 29, 1869, making inquiries concerning the "ramie." He has been led to infer that this fibre is something different from China grass, and has written to parties in the south for information concerning it. In answer to a request for samples, a Mr. Brückner, of New Orleans, sends him an advertising pamphlet, with the statement that "a considerable quantity is annually received in Europe, and manufactured into fabrics of the finest quality, excellence in strength, and beauty in finish;" but on careful investigation by a clerk of the consulate at Liverpool, not an ounce of it was discovered or a man found who had seen or known anything of it. The letter of his New Orleans correspondent further says, "that it is as yet a new thing here, and judging from my experience the past year, it is likely to remain a new thing for several years to come. At present there are no manufacturers engaged in making up ramie in this country, and had sufficient been produced it would have been shipped to Europe in its raw state, merely freed from the wood." His stock of last year's growth had been exhausted by samples sent to agents to stimulate the sale of cuttings.

So far as the Department has been able to ascertain, little if any use has thus been made of the fibre, except as an aid to speculation in roots and cuttings. To forward these commercial operations, the statement is either falsely or ignorantly made that this ramie is not China grass,

and that it will not grow from seed. It is time that honest experiment had demonstrated either the success or failure of this effort to add to the list of our producing industries. Thus far, while instances of successful propagation and vigorous growth are numerous, and even a few cases of large plantations of the *Baumiera* are reported, no information of *bona fide* shipments of fibre in quantity has been communicated to the Department, or evidence offered of its manufacture in this country, beyond a few experimental specimens. The economical utilization of the fibre by improved processes and skilled labor is a great desideratum; but the plunder of hopeful experimenters by extortionate prices (for a plant that will grow like willows) obtained through misrepresentation and gross exaggeration, will not be abetted by the Department of Agriculture.

A great difficulty in the way of its manufacture is found in the preparation of the fibre. Mr. Dennet, above quoted, an American now in France, is experimenting in the preparation of various fibres, with reference to the avoidance of hackling, beating, and mangling by machinery, aiming to free them from woody, mucilaginous and other substances, without affecting their strength or integrity, and using the waste in soap-making. He says: "We then bleach before spinning. I am not satisfied to employ the bleach as ordinarily used; but I prepare and make my own liquid chlorine as a bleaching agent, say 2,000 gallons at a time. I employ the manganese and hydrochloric acid of commerce, the former at six francs per hundred-weight or the latter at three and one-half francs per hundred-weight, and use the waste steam of the factory as heat—not fire—to effect the decomposition. When the chlorine gas begins to go off en route to the receiver, I arrest both the acid and the gas, separating one from the other, turning back the acid and letting the chlorine gas go en route to the 2,000 gallons of water with a given quantity of chloride of lime therein, which is kept in motion while the gas is coming off, 12 or 14 hours. After a given time we have a pure, limpid, strong eight and one-half to ten degree Baumé chlorine bleach, *free of acid*, free of chloride of lime, or any other deleterious or injurious agents, which are found in the "warranted" and "guaranteed" bleaching powders which are supplied by merchants and used by bleachers throughout Europe and America, and for which they have to pay from 25 to 35 per cent. for stuff no better than dirt, getting six and one-half, seven to eight degrees of chlorine, full of acid, chloride of lime, &c., of a dirty sea-green color, always indicative of acid.

The evil of the old system is, that when the bleach is employed, coming in contact with the fibre, the acid, being the heavier body, seizes hold of the fibre and retards the bleaching; the material is also filled with the chloride of lime. When the yarn or thread, or material, is dried, it is not a strong white, (especially if jute,) but a creamy white; and further, when it comes in contact with heat, the cylinder being calendered, the color shoots off, and when being printed in colors other agents are at work; and when colors are drawn, as in carpet-making, they cannot employ successfully other than black or chocolate; the white goods and paper are injured, and finally rot. This has been proven with printers and booksellers, and the paper-makers know it well. I know this from having had 23 years' experience with paper. Why do the bleachers of England, France, America, everywhere employ the sulphuric acid bath? After the use of chlorine they dilute the acid, to be sure; but the poison once in cannot be got out, injuring their pulps, their yarn, their goods.

The great secret in treating the fibre is, first to well understand its nature, properties, and character. Some are full of rosin and silicate, and, when pulped, are black; but when bleached by this process with

pure chlorine, are white, and will not deteriorate or injure. The pulp can be put into an air-tight room, and the stock bleached by gas. By this art the manufacturer can print and the carpet-weaver can draw on any colors, and the paper-maker have a stock that he can shelve; the color will hold fast and strong and the material will not rot.

He says further concerning the China grass or ramie fibre, and the difficulty in its manufacture:

"The persons who have treated the China grass, especially the French, in attempting to give it lustre, a *glacé* surface, have so treated by acids and otherwise to get it white, as to make it crispy, glassy, (instead of *glacé*, soft, and smooth,) and brittle. The consequence is, where attempts have been made to work it up with silk, cotton, flax, wool, great difficulty has been found in making it nap."

The following correspondence is given as a suitable answer to the inquiries of this and many other correspondents:

SENATE, March 26, 1869.

MY DEAR SIR: I have several, in fact numerous letters, asking information touching the present status of the ramie. Will you send me a circular note giving the information concerning it.

Very respectfully, yours,

W. SPRAGUE.

Hon. H. CAPRON, *Commissioner.*

The response to the above is herewith presented:

DEAR SIR: Yours of the 26th instant, asking information relating to the present status of the ramie plant, (*Boehmeria tenacissima*,) is received.

It is the China plant of commerce, yielding a long, strong, and lustrous fibre, which has been known in the east for centuries, and of late years imported into Europe and experimented with by European manufacturers, who have met with some success, and at the same time serious obstacles, especially in the brittleness of the fibre. A considerable quantity was imported into Great Britain a few years ago, but the importation was reduced in 1867 to 584 cwts., and in 1868 to eight cwts. In eleven months of last year the cost of this fibre imported was only £32.

This plant has been propagated in this city for 14 years, and its seed has been distributed by this Department for two years. It has been planted throughout the extreme south, and everywhere grows luxuriantly, and gives assurance that unlimited quantities of material for fibre could be produced. I am not disposed further to encourage its growth until manufacturers perfect processes, and invent or adopt machinery for preparing and manufacturing the fibre so economically that a great demand shall spring up for the raw material. All depends upon the successful attainment of such an end. The farmer of this country can answer any demand for it, but will wait till the draught is made upon him.

The subject has been discussed in the Annual Report of 1865, in that of 1867, and the latest results of the culture will be given in that of 1868. I have encouraged the experiment, and yet hope to see valuable results from it, while deprecating the blind spirit of speculation in cuttings, and the circulation of exaggerated and unreliable statements concerning its habits, productiveness, price of its fibre, and the manufacturing demand for it.

Respectfully,

HORACE CAPRON,
Commissioner.

Hon. WILLIAM SPRAGUE,
United States Senate.

AGRICULTURE IN NEBRASKA.

A correspondent furnishes the following statement in reference to the resources of the State of Nebraska :

A line drawn diagonally from Maine to California will intersect a similar line from Washington Territory to Florida somewhere within the comparatively new State of Nebraska. By this simple demonstration it will be perceived at a glance that, as far as geographical position is concerned, Nebraska holds the central place in the great combination of States comprising the American Union. It has an area of about 73,000 square miles, or nearly twice that of either of the great and influential States of New York or Pennsylvania. Its population, which in 1860 was estimated at 28,000 persons, has now probably reached five times that number. Nebraska is strictly an agricultural State. It has neither forests, water-power, nor minerals, not even coal, to any considerable extent, so far as is yet known.

The climate is of a medium temperature. The thermometer may sometimes in the summer reach 100 degrees at noon, but the strong breezes from the Rocky mountains always render the night cool and comfortable. Winter weather commences about the first of December, and although thaws and rains prevail a considerable portion of the time until the first of April, balmy and delightful days, and even weeks, intervene, the mercury in the meanwhile descending below zero only on rare occasions.

The topography is entirely characteristic. No other section, not even those which are formed like it, high rolling prairie countries, possess the same peculiarities. There are, as a general thing, neither plains nor hills; the whole surface looks as if cast in a mould. There is no level ground except at the margins of the streams, which prevail only at rare intervals, and then it scarcely ever reaches an extent of more than 200 or 300 acres in any one place. The prevailing form of the surface is a succession of ridges gently and smoothly rolling like so many great wrinkles on the brow of nature, but without uniformity, and lying towards each other at every conceivable angle. These irregularities of surface are so gentle, and the hillocks so round and smooth, that no impediment is experienced to the cultivation of the land.

In respect to streams and timber there is a deficiency, annoying to all settlers, and which, in the minds of many, is an obstacle altogether insurmountable. Except on the margins of the water-courses, or where the enterprising settler has supplied the deficiency by artificial aid, the State is destitute of trees. Whenever the prairie fires are kept in check, however, the timber will grow rapidly and vigorously. The principal varieties of trees are the oak, hickory, and cottonwood. In four or five years the latter will attain the size of a man's arm, and become available for fuel and other useful purposes.

The streams are uniformly deep and sluggish, but narrow. During the droughts of summer the banks are often left six or eight feet high, as perpendicular and smooth as if cut with a spade. Although the streams have a tendency to dry to the bottom throughout the whole extent, there are at intervals, in the beds, springs which never yield to the heat. In tracing the course of a stream, these springs or pools are to be found at the distance of every half mile or less. They vary in size from 5 to 50 feet in breadth, and from 10 to 100 feet in length. They are generally oblong in shape, and are concealed from view by the tall grass with which they are surrounded, unless immediately approached. Without this wise provision of nature for supplying the vast herds of the buffalo which once grazed here, these animals could not have subsisted during the summer. The water in these springs is generally clear, cool, palatable and abundant. The well water of Nebraska is also of excellent quality and easily obtained. In many instances it is not necessary to dig more than 15 or 20 feet; and, in some cases, good water has been obtained at the depth of 10 feet. The soil, although easily penetrated by the spade, has a tenacity which renders unnecessary the walling of wells.

The drought during summer is the great impediment to agriculture in Nebraska; but last season the counties bordering on the Missouri river were unaffected by it, and the supply of rain in that section was abundant. This difference is accounted for in the minds of many practical observers in the attraction furnished to passing clouds by the water of the Missouri and the growth of heavy timber on its banks.

From the nature of the soil, however, and the peculiarities of the surface, a protracted period of dry weather does not affect vegetation here as in many localities. The rain, on falling, fills the numerous gulleys and is rapidly absorbed by the ground. The hot sun and fresh breezes on the tops of the hillocks causes a free evaporation, but excessive dryness is prevented by a constant supply of moisture, brought to the surface by capillary attraction. It is a well-known fact that, in mountainous countries, springs which are dry in rainy seasons, give forth a copious supply of water when the soil has been parched with heat for any considerable time. The same law, on a more extended scale, seems to be in operation throughout Nebraska; for experience shows that a protracted, heated, and dry term does not have the effect in parching vegetation growing upon her irregular surface that would follow in a flat prairie section.

The great pest of Nebraska is the grasshopper or locust, yet it has this affliction only in common with other localities.

The soil has the dark color common to all prairie countries; but the tinge is more inclined to gray than is observable in the soil of Illinois. The loam does not extend to the same depth as in that State, and contains a larger proportion of silica. After digging a few feet, earth of a bright yellow cast is reached.

The native grass affords to the casual observer no special indication of fertility. It is by no means of rank growth, not being more than 8 or 10 inches high, sparsely set, and in limited quantity. Few weeds or shrubs are to be seen. The grass in the low lands, however, attains a vigorous size, and often reaches as high as a man's head, from which the settler obtains his hay for winter use.

The wild grass, although apparently dry and harsh, is quite nutritious; and cattle thrive on it marvellously. This section was in former times the favorite resort of the wild cattle, whose instinct led them to the best pastures.

In general appearance there is nothing about Nebraska to gratify the imagination except where cultivation and art have beautified the landscape. When Lewis and Clark looked upon the locality in the unbroken solitude of nature, I do not wonder that they termed it the "Great American Desert;" but time and the pressure of emigration westward have demonstrated the grossness of the misnomer.

The climate and soil are favorable to the production of every variety of grain and grass. Wheat and corn flourish to an extent not surpassed in any of the States of the great West. It is not uncommon for the farmer to raise 30 bushels of the former and 75 of the latter per acre. Oats and barley yield in the same proportion.

All kinds of vegetables, potatoes, beets, carrots, cabbages, onions, &c., attain great perfection.

Attempts at raising tobacco and sorghum have been attended with considerable success.

There are considerable numbers of wild grape vines and plum trees in the timber along the water-courses, but the adaptability of this soil and climate to general fruit culture has not yet been fully tested. Fruit trees have been planted in considerable numbers, but have not yet sufficiently matured to demonstrate their bearing capacity. The apples, pears, grapes, and plums, thus far produced, are of the first quality. Berries of various kinds develop readily and fully; and I believe that care and experience will produce the same results with the larger fruits.

For stock raising Nebraska has ample resources. The vacant lands of the State and of the railroads give the herdsman a wide range. A herd law, which renders fences unnecessary and acts as a protection to the grain grower, is an actual benefit to the stock raiser. Much attention has been devoted to this department of agriculture in various sections. The State was the natural home of wild horses and cattle; and the Indian ponies, in proportion to their bulk, are as hardy a race of animals as can be found anywhere. The air is clear and healthful, the climate temperate, the surface of the ground irregular, the grasses nutritious and abundant, together with an exhaustless supply of all other varieties of food. Thus far stock raising has met with good success; and Nebraska is producing many fine horses and mules, and has some excellent specimens of the best breeds of horned cattle and sheep, the high ground and the dry and salubrious atmosphere being particularly favorable to the latter.

A large amount of the land of Nebraska is withheld from settlement by railroad grants and speculators. The homestead or pre-emption settler is the only party who can now receive the advantage of the government's liberality. The fact that there is a constant stream of this class of immigrants pouring into the State is a sure indication of a sentiment prevailing in the older States in accordance with the views herein expressed; and I believe they cannot seek a location where practical sense and vigorous industry will meet a more ample return. They must not expect to find a land flowing with milk and honey, or imagine that ease and repose await them. They will not find all the comforts and necessities of life ready prepared. Their paradise will only come from the sweat of the brow. The pioneer's hope rests on a willing heart and a ready hand. Luxuries he must not expect; comforts he will only find by a cheerful contentment with his lot. If he is destitute of money and has but one poor yoke of oxen, and a frail covering for his wagon to protect his wife and children from the cold night winds, he need not despair. With the example in his mind of others who have preceded him, he may well feel that he has at his command resources which will not fail him.

Necessity is the mother of invention, and the Nebraska settler, in default of trees to build a log-house, does not appeal in vain to mother earth for shelter. He can select the favorable side of a ridge and prepare a "dug-out." This architectural anomaly is worthy of a description, and some idea of its mode of construction may be valuable to those who contemplate trying a pioneer life. The settler cuts into the bank an opening of the size required, digging two or three feet below the level of the surface in front. The plastic nature of the soil allows him to dress the sides and the floor as smoothly as if the cavity had been cut from a bed of solid marble by the chisel of a skilled workman. He then proceeds to the nearest bottom, and cuts a couple of forked saplings, of which to make his door posts. Having placed horizontally on the prongs another sapling, he pins to the middle of it another prong to support the ridge-pole. He then has the front part of his roof; the rear being in the bank is easily managed. He then places on top such twigs and branches as he can find, and perhaps a

board or two, and overlays compactly with sods and prairie grass. He then has a roof that will shed water, perhaps not as effectually as boards and shingles, but which for want of them must be made to serve the purpose. As a finishing stroke, all the openings in the sides, except a door and window, are compactly filled in with layers of sods. Fireplaces and chimneys are constructed in the same primitive style, but a common substitute for them is a small cooking stove, with the pipe projecting through the roof. Shelters for cattle are made nearly in the same way, the front being left open.

Another mode of constructing a dwelling is to use sods, instead of bricks, and prairie mud instead of mortar. These materials are a substitute for the sun-hardened tiles and adhesive clay of New Mexico, and the habitations are dignified in this section by the name of "adobe houses."

In these rude and uncouth structures the patience and efforts of the housekeeper are doubtless severely taxed to attain comfort and render appearances comely, but I have seen in them an order and neatness which would be sought for in vain in some more pretentious residences.

In some of the more favored locations the settler has the materials for stone or log-houses. Were it not for the scarcity of fuel, good bricks might be manufactured. Log, stone, or brick houses are extremely rare. The most usual kinds are those described, or the small frame shanties, built of imported lumber, costing from \$75 to \$100, which are generally the choice of men of the requisite means. I doubt, all things considered, if the latter are as comfortable as the former. Any of these structures come within the requirements of the homestead law, which demands that the settler's dwelling shall have a window, door, floor, and roof, and be a comfortable house to live in.

The first duty of the immigrant, after having provided a shelter for himself and family, and one for his cattle, is to prepare his ground for a crop. The best time for breaking prairie is between May and August, although some continue this work all the year round, when the weather will permit. Between the months named the sap is running upwards, and the roots will die, which is not the case when it is descending. Ground broken later becomes overgrown by means of the reinvigorated roots of the grass, and it is found very difficult to eradicate them.

Recently a company having 30,000 acres on Salt creek, near Lincoln, the capital of the State, introduced a steam plough, costing \$10,000, from Leeds, England, and designed continuing operations all winter. They broke to the depth of seven or eight inches, entirely covering the sod; the result of the experiment remains to be seen. The usual depth of breaking is about two inches, or just enough to detach the roots and peel off the sod.

The settler who has means at his command will have his own teams and hire assistance, or, if he chooses, can get his ground broken by contract at \$3 50 per acre. But the majority have neither money nor sufficient teams; perhaps only one yoke of cattle or a span of horses. The method of such is to "change work" with their neighbors, uniting their own and the labor of their teams. In this humble way they commence operations and lay the foundation of competency and independence.

The soil is allowed to remain undisturbed until the spring opens, when it is easily pulverized with the harrow, and is prepared for the seed without additional labor.

No successful attempt has been made to raise winter wheat in Nebraska. The ground, in consequence of the high winds, is kept bare of snow, and the sprouts yield to the rigor of the weather.

One of the resorts of the pioneer to obtain a crop, when he cannot wait for the full preparation of the ground, is to plant "sod corn." Having broken the prairie in the spring and allowing it to remain until planting time without further attention, he then proceeds to raise the sod with a hoe, and, at proper intervals, throws in a few grains of corn, pressing back the sod with his foot; or, if he prefers, he can cut the sod with an axe, covering the grains, of course, in the same way. Often a crop of 30 or 40 bushels of corn to the acre is raised by this method.

Having provided for a crop, the next thing which will occur to the sagacious farmer is to make an effort to supply the deficiency in timber. He will select a favorable location and after ploughing several furrows to prevent the encroachment of the prairie fires, he will proceed to plant on the area within the requisite number of trees. This work is done by making furrows at intervals of three or four feet and then with a hoe securely setting the roots of the twig. The cottonwood, on account of its rapid growth, is generally selected. A great abundance of little trees of this species is obtainable from the banks of the Missouri. The lack of fuel is at present one of the greatest drawbacks to the prosperity of Nebraska; but if the present attention to tree culture is continued, it will in 15 or 20 years have a greater abundance of timber than many of the older States.

I commenced by referring to the central location of Nebraska, and shall conclude with a mere allusion to the advantages which her position as a great agricultural centre afford. With the mining regions of the Rocky mountains on one side, and the hungry east on the other, as the means of communication radiate to all points of the compass, her abundant crops, her flocks and herds, will find their natural markets, and rich returns will come back to fill the farmers' heart with gladness; civilization will extend its full power, and every boon within the scope of rational human aspiration be granted her people.

CASTOR-OIL BEAN.

The culture of the *Palma Christi* is extending in Texas and in Florida, as well as other southern States, and is found to be profitable. This plant delights in a deep, dry, sandy loam, and is claimed to be, like clover, an ameliorator of the soil, and to such an extent that land owners have offered the gratuitous use of land to be planted in this crop. The Department is frequently called upon for information concerning its culture. It is said to be a native of India, but has been dispersed throughout the temperate portions of the civilized world. While it grows only to a height of about three feet towards the northern limit of its culture, it becomes a plant of eight or ten feet in semi-tropical regions, resembling a small tree.

The oil is extracted by boiling the seeds, or by pressure in a hydraulic press; the latter process yields oil of the best quality. In India it is mixed with water, and the water evaporated. The hydraulic press was used in St. Louis as early as 1847. A press, patented by Mr. Latourette, October 28, 1851, greatly increased the product. One of these presses is estimated to use 150,000 bushels of beans per annum, making 400,000 gallons of oil.

A thorough preparation of the soil is required, as for planting corn or any other hoed crop. The hills should be six feet apart in good soil in latitude 30° to 35° . If very rich, or further south, the plants will be near enough at seven feet. In more northern locations, as in southern Illinois and Missouri, the distance might be five feet, but not less than four. It is convenient to leave a space every half dozen rows sufficient for the passage of a team in gathering the beans. Two quarts of seed will plant an acre. Soaking the beans in hot water before planting will assist germination. But one or two plants should be left to grow, though half a dozen or more might be allowed for the use of cut-worms. The culture is simple as that of the common bean or maize, nothing being requisite but frequent loosening of the surface with a cultivator until the plant begins to monopolize the field and shade the ground. Frequent culture, as with corn, is important, but care should be taken not to injure the stalks by careless movements of the team.

The harvesting commences from the first to the middle of August in this country, when the pods begin to turn brown, and it should not be delayed till the husks open and the beans are expelled. The entire spike, containing many pods, should be cut off. Drying yards, with exposure to the sun, the surface well rolled, have been employed, but are not deemed necessary. The beans should be kept dry, as sprouting nearly destroys their value, and cleanliness is important. The price varies considerably, according to the importation and production, and also locally from proximity to market and other causes. It has been as high as \$5 per bushel within three years, and as low as \$1 25. Twenty bushels per acre is an average yield, though three times as much has been obtained.

DECREASE OF WOOL-GROWING.

In a recent address before the Boston Social Science Association, Edward Atkinson said :

Our supply of leather from our own cattle is entirely insufficient, being only two-thirds of what we need; and this insufficiency is greater now than formerly, from two causes. The first is the excessive demand for beef during the war; the second, the unnatural stimulus given to the raising of sheep rather than of cattle, caused by the so-called protective duty on wool.

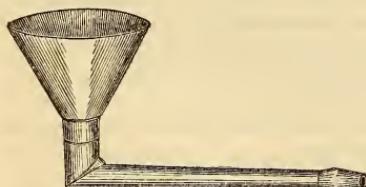
The plain inference that cattle-raising has declined and wool-growing advanced since the enactment of the present wool tariff, and as a result of such enactment, is correct neither in one nor the other branch of this statement. On the contrary, cattle have increased and sheep diminished, but not as a result of the passage of that law. The diminution in sheep has been heavy—not less than 20 per cent.—while the increase of cattle has been very slight. The need of woollens during the war excited an extraordinary demand, in the supply of which home producers shared with foreigners. The high price of gold acted as a protection, but the cattle and wool interests enjoyed that advantage in equal proportion. When the tariff was enacted a reaction in wool had commenced, not only in the United States, but also, in a less degree, in every wool-producing country. The law has simply broken the force of that reaction, and prevented a ruinous sacrifice of all our flocks, which would have bankrupted thousands, without benefiting in the slightest degree the cattle farmer, or cheapening beef or hides.

SMUTTY CORN POISONOUS.

Professor John Gamgee communicates the following:

In the Germantown Telegraph of the 13th instant there appears a paragraph on the poisonous properties of smutty corn, which may mislead. There is no doubt whatever that in West Virginia, Iowa, as well as New York and other States, an abundance of smutty corn has been fed to cattle with disastrous results. Combined with an excess of other food it does little injury, especially if cattle are supplied freely with fresh water. It should be used very sparingly, if at all, as the smut or fungus—*Ustilago maydis*—is a poison that acts deleteriously on the alimentary canal and the nervous centres.

Referring to treatment, however, some one has given me credit for a much more liberal use of medicines than I am accustomed to, and my prescription is not correctly stated. A pound of epsom salts, with or without half an ounce of aloes, and two drachms of ginger, given in half a gallon of tepid water, will usually overcome the constipation. Sulphur is a



convenient substitute sometimes, given in treacle or gruel; but five pounds at a dose is about five times as much as there is any necessity for. Farmers will find that one or two four-ounce doses of common salt will make the cattle drink greedily; and either plain water or linseed tea, *ad libitum*, will prove a good means of affording relief. In all affections attended with constipation of the bowels, warm water injections prove invaluable. A device similar to that shown in accompanying cut is very easily made by any tinman, and will be

found a cheap and effective substitute for a syringe.

WHEAT IN MINNESOTA.

The following statement shows the amount of grain and flour at Winona, and at the stations of the Winona and Saint Peter railroad, on the opening of navigation this spring:

	Bushels.
Winona, in elevator	299,008
Winona, in warehouse	104,000
Winona, 9,050 barrels flour, reduced to wheat.....	45,250
	448,258
Minnesota City	3,000
Lewiston	10,518
Utica, estimated in warehouses.....	3,500

	Bushels.
Saint Charles.....	25, 137
Eyota, in elevator.....	28, 951
Eyota, in warehouses.....	10, 000
	<hr/>
Rochester, in elevator	32, 966
Rochester, in warehouses	12, 000
	<hr/>
Kasson, in elevator.....	23, 307
Kasson, in warehouses.....	6, 000
	<hr/>
Claremont	29, 307
Waseca	21, 000
Byron, Meridian, and Havana, estimated.....	103, 357
	<hr/>
Total.....	10, 000
	<hr/>
	737, 994
	<hr/>

THE WESTERN GRASSHOPPER.

Mr. B. O. Driscoll, of Doniphan City, makes the following suggestions in regard to the grasshopper or locust of the western States:

"I would recommend ploughing all clear naked spots, roadsides, &c., especially north, and when eggs are found along hedge rows the surface should be scooped into a ditch or furrowed, and then covered deep with a plough. Where there is danger of an incursion of those wingless grasshoppers, I would suggest a ditch, as is often used in Montana and elsewhere, or a close fence four feet high, or, better still, a bed of straw in their line of march, to be burned when their advance guard are passing over, or have gathered upon it, when those not destroyed will turn back and seek other fields of pasture. As to the kind of crop to plant, I have no suggestions to make, for I find that no *green thing* is exempt from their ravages, and that when one crop is wanting another will suffice, but that hemp, cabbage, and barley are preferred to many other kinds, and to protect cabbage and potatoes, I would recommend strong salt water. Air-slacked lime will answer a good purpose for many kinds of crops after the salt water. Many fruit trees have been injured by the grasshoppers, but none have been killed to my knowledge."

FOREST CULTURE.

The legislature of Nebraska has passed a law exempting from taxation for five years \$100 worth of the real property of each tax-payer for each acre of forest trees he shall plant and cultivate, provided that the trees shall not be planted more than 12 feet apart and shall be kept in a healthy and growing condition; and an exemption of \$50 worth of real property for each acre so cultivated, whose distance shall not exceed 33 feet apart.

The Northern Illinois Horticultural Society recently adopted resolutions urging the legislature of that State to pass a law for the encouragement of the planting of forest trees, either by remitting State taxes or by giving premiums for plantations of useful forest trees. The society

also adopted the following list of timber trees for cultivation in northern Illinois:

“*For groves*.—European larch, black walnut, butternut, white pine, tulip tree, and white, red, and blue ash.

“*Nut-bearing trees*.—Butternut, black walnut, shellbark hickory, and chestnut.

“*Shade and ornamental trees*.—White elm, silver maple, white ash, mountain ash, tulip tree, honey maple, honey locust, rock elm, and cucumber tree.

“*Evergreens*.—Norway spruce, white spruce, Austrian pine, white pine, red pine, balsam of fir, arborvitæ, and red cedar.”

ADULTERATION OF SEEDS.

The adulteration of seeds has become so great an evil in England that leading agriculturists of that country are calling loudly for special legislation in reference to the matter. It is proposed that this dishonesty shall be declared a crime by act of Parliament, to be punished by fines graded according to the various forms of the offence. While such a law is regarded as a desideratum, it is deemed of even greater importance that farmers should educate themselves in the detection of such adulterations as a safeguard stronger than the law itself. The subjoined table, showing the prices and germinating powers of different samples of clover seed, is taken from the London *Gardners' Chronicle*. The specimens reported on were obtained in the market. Most of the samples contained a proportion of weeds, which were put aside, the clover seeds alone being subjected to trial:

Samples.	Price per cwt.	Percentage of dead seeds.	Percentage of germinating seeds.
	<i>Shillings.</i>		
1. Red clover.....	56	32	68
2. Do.....	32	50	50
3. Do.....	51	40	60
4. Do.....	66	5	95
5. Do.....	74	4	96
6. Do.....	80	5	95
7. Do.....	70	5	95
8. Do.....	75	3	97
9. Do.....	60	40	60
10. Do.....	27	70	30
11. Do.....	75	10	90
12. Do.....	72	5	95
13. Do.....	80	5	95
14. Do.....	66	60	40
15. Do.....	70	15	85
16. Cow grass—clover.....	90	4	96

BRITISH IMPORTS OF COTTON AND WHEAT.

Cotton.—The following table from official returns shows an increase of only five per cent. in the cotton imports of Great Britain for 1868 over those of 1867. This country still heads the list, with an increase of over eight per cent., while British India fails to furnish as much as in 1867. The proportion of the United States receipts to total imports is also larger, being above 43 per cent. of the whole supply. The statement is as follows :

Cotton, raw.	Quantities imported.	
	1867.	1868.
From United States	<i>Cwts.</i> 4,715,733	<i>Cwts.</i> 5,128,971
Bahamas and Bermuda	10,623	737
Mexico	22	-----
Brazil	628,761	882,114
Turkey	57,024	40,983
Egypt	1,127,541	1,153,419
British India	4,449,259	4,408,095
China	4,707	-----
Other countries	278,981	243,574
Total	11,272,651	11,857,893

Wheat.—The wheat deficit of Great Britain, always comparatively large, was less than usual in 1868, and the imports were consequently reduced from 34,645,569 cwts. in 1867 to 32,639,768 cwts., or 60,927,566 bushels. This country has advanced its position to the second place, displacing Prussia; Russia still occupying the first in supplying the bread deficiency. The United States sent 5,908,149 cwts., or 11,028,544 bushels. This is quite as much as could be expected in the present condition of production, more than the future will probably average, and more perhaps than is desirable to send abroad, as we can never expect to gain anything but the impoverishment of lands and the dwarfing of national industries by exporting cereals or other bulky products of agriculture. This export, respectable as it is, is but 18 per cent. of the receipts of Great Britain from foreign sources.

In addition to the wheat, the amount of flour imported was 3,093,022 cwts., which is a slight decrease. Of this the United States sent 676,192 cwts., or 386,395 barrels, equivalent to 1,931,975 bushels, which added to the unmanufactured grain would swell our wheat exports to 12,960,579 bushels.

	Imported.		Entered for home consumption.	
	1867.	1868.	1867.	1868.
Wheat:				
From Russia	cwts..	14,025,236	10,053,617	14,159,861
Denmark	cwts..	418,012	654,419	422,509
Prussia	cwts..	5,572,263	4,584,742	5,603,694
Schleswig-Holstein and Lau-cwts..	enブルグ.	127,222	45,412	127,632
Mecklenburg	cwts..	651,884	647,205	654,569
Hanse Towns	cwts..	700,935	756,654	705,794
France	cwts..	597,405	56,414	599,402
Illyria, Croatia, and Dalmatia cwts..		542,635	1,004,701	543,964
Turkey, Wallachia, and Moldavia..	cwts..	2,446,638	3,049,088	2,455,311
Egypt	cwts..	1,451,774	3,219,536	1,458,457
United States	cwts..	4,188,013	5,908,149	4,219,966
Chili	cwts..	1,946,227	1,309,575	1,957,386
British North America	cwts..	683,127	557,443	684,492

HUNGARIAN WHEAT EXPORTS.

The following figures exhibit the exports of wheat from Hungary for the several years ending July 1, 1868:

Years.	*Centner.	Years.	Centner.
1855-'56.....	2,449,284	1862-'63.....	8,381,761
1856-'57.....	4,651,200	1863-'64.....	4,452,991
1857-'58.....	3,289,270	1864-'65.....	4,310,218
1858-'59.....	2,242,072	1865-'66.....	4,471,003
1859-'60.....	2,051,032	1866-'67.....	8,571,438
1860-'61.....	6,800,758	1867-'68.....	30,801,657
1861-'62.....	8,737,659		

* 113.44 pounds.

ENGLISH CEREAL CROPS OF 1868.

The following table, from the Mark Lane Express, gives a condensed view of the aggregate results of the reports from 536 correspondents from every part of England, the details of which were given in our last monthly report:

Classification.	Wheat.	Barley.	Oats.	Beans.	Peas.
Failure.....			13	23	6
Two-thirds under average.....		4	5	22	2
One-half under average.....		29	36	43	16
One-third under average.....	1	32	66	71	20
One-fourth under average.....		11	18	36	18
One-fifth under average.....		4	8	1	1
Under average	12	252	241	142	166
Average	134	135	93	68	150
Over average	288	25	5	4	18
One-fifth over average	7	4			
One-fourth over average	38	3	2	1	6
One-third over average	18	1			
One-half over average	20	3	2		
Two-thirds over average	9		1		
Double the average	1				
Total.....	528	503	490	411	403

In analyzing the above table we find that out of 528 returns on the wheat crop, there are only 13 under an average, against 134 averages and 381 over an average. In addition to this, the average weight and quality of the grain was from two to three pounds per bushel greater than usual, adding from four to five per cent. to the product of flour, of which the excess consists, the bran and offal of good wheat being lighter and less in quantity than that of inferior grain. The returns of barley show 332 under, against 171 average and above it. The bulk of this crop was too thin for malting, having been deteriorated in quality as well as quantity from too hasty ripening, especially on light soils. It is estimated that the crop is from one-third to two-fifths of an average, and a large proportion of this not fit for malting and available for grinding purposes and seeding only. Out of 490 returns on the oat crop there are 387 under, against 103 average and over, and the total deficiency is estimated at two-fifths. The bean and pea crops also show considerable deficiency.

AGRICULTURAL PRODUCTION IN PRUSSIA.

The Prussian government has a statistical system by which the productions of agriculture are reported yearly. The following is the official statement of the results of the harvest of 1868 in the different provinces, the figures being less or more than 100, as they represent more or less than an average crop :

Province.	Wheat.	Rye.	Barley.	Oats.
Prussia	94	84	76	73
Brandenburg	100	90	73	72
Pomerania	101	97	81	79
Silesia	101	82	76	80
Posen	104	97	74	75
Saxony	103	94	88	87
Westphalia	99	104	79	76
Rhenish Provinces	95	96	84	83
Hohenzollern	92	98	86	91
Hanover	102	100	82	78
Schleswig-Holstein	101	93	72	72

The average production for the whole kingdom of Prussia was thus as follows last year: Wheat 99, rye 94, barley 80, oats 79. For 1867 the corresponding average was: Wheat 74, rye 74, barley 87, oats 97.

Statement of the number of live stock in the United Kingdom and in various foreign countries, according to returns furnished by the statistical departments of the respective countries.

Countries.	Date of returns.	Cattle.			Sheep and lambs.	Pigs.
		Cows.	Other kinds.	Total.		
Great Britain	1868	2,143,895	3,280,056	5,423,981	30,711,396	2,308,539
Ireland	1868	1,463,058	2,157,294	3,620,352	4,822,444	862,443
Total United Kingdom, (including Isle of Man and channel islands.)	1868	3,625,137	5,458,279	9,083,416	35,607,812	3,189,167
Russia in Europe, (exclusive of Poland and Finland.)	(*)			22,816,000	39,315,000	9,517,000
Russia in Asia	(*)			2,628,000	5,815,000	580,000
Sweden †	1866	1,235,000	750,000	1,985,000	1,650,000	390,000
Norway	1865			953,036	1,705,394	96,166
Denmark proper	1866	811,831	382,030	1,193,861	1,874,052	381,512
Prussia	1867	4,865,898	3,130,920	7,996,818	22,262,687	4,875,114
Wurtemberg	1867	465,943	445,070	911,013	655,856	254,883
Bavaria	1863	1,521,113	1,641,274	3,162,387	2,039,983	921,456
Saxony	1867	413,755	211,505	625,260	304,687	325,564
Holland	1866			1,271,563	1,076,374	321,534
Belgium †	1856			1,257,649	583,485	458,418
France	1862	5,781,465	8,415,895	14,197,360	33,281,592	5,246,403
Spain	1865			2,904,598	22,054,467	4,261,817
Italy †	1867			3,708,635	11,040,339	3,886,731
Austria	1864	6,094,865	7,365,437	13,660,322	16,573,439	7,914,855
Switzerland	1866	627,116	365,779	992,895	445,400	304,191

* Average of 1859 to 1863.

† Estimate returns.

‡ Results of census of 1866 not yet known.

THE NETHERLANDS AND THE PROJECTED EXHIBITION.

International exhibitions are coming thick and fast upon us. One has been announced for Holland in the autumn, while others in prospective are looming up in the distance. It is a bold step for a little kingdom like Holland, inviting exhibitors from all countries, and it may be interesting as well as instructive to examine the capacity and resources of this little territory. The superficies of the Netherlands is 3,284,000 hectares,* or about 500,000 hectares more of the lands more or less submerged of the Zuyder Zee and Dollard are included. The provinces of Zealand and of Holland have added to their territory by means of dikes 263,000 hectares, of which 180,000 hectares are highly fertile, argillaceous land, producing madder and cereals. The highest elevation of this extremely level country is scarcely more than 600 feet above the level of the sea. The population of the kingdom is only 3,605,000, of which 254,000 are employed in agricultural pursuits. The cultivated lands include 807,104 hectares; pastures, 1,317,000 hectares; forests and woodlands, 225,687 hectares.

The agricultural products were, a few years since, stated to be as follows, in hectolitres: † wheat, 1,741,222; rye, 3,671,000; buckwheat, 1,244,000; barley, 1,500,000; oats, 3,700,000; beans and peas, 1,000,000; potatoes, 14,000,000. The total value of these was estimated at £17,000,000. The values of the products of the forests, gardens, and pastures have not been estimated. The value of the live stock in the kingdom is estimated at over £16,000,000. The last official returns (in 1866) the Netherlands possessed 254,019 horses, 1,308,008 cattle, 967,312 sheep, 295,814 hogs, 123,198 goats, and 2,848 asses and mules.

Among the manufacturing industries of Holland may be mentioned

* Hectare, 2.4711 acres.

† Hectolitres, 2.83782 bushels.

brick-yards, tile-works, and potteries to the number of 500 to 600, in Gelder, Overyssel, and South Holland, the annual make of bricks being about 400,000,000; 400 to 500 distillers of Geneva or Hollands, of which 221 are in Schiedam; more than 300 manufactories of tobacco and cigars, principally at Amsterdam, Utrecht, and Eindhoven, which export largely to Germany and North America; many factories where madder and garancine are prepared; 300 to 400 oil-crushing mills; steam acid factories; paper mills; sugar refineries, producing 126,000 tons annually; rice-mills, &c., besides the cotton, flax, and woollen industries.

The projected exhibition is to be held in August and September, principally of articles of domestic economy, suited chiefly to the wants of the working classes, and which, at a low price, combine usefulness with solidity. The articles principally sought are plans and materials for dwellings, household necessaries, clothing; food, such as corn-chandler's wares, preserved meats, drink; modes of preparing the same; workmen's tools; means of moral, intellectual, and bodily development; and finally, reports, statistics, and regulations of associations for promoting the well-being of the working classes. The exhibition is to be held in the Crystal Palace at Amsterdam, and promises to be a success.

FACTS FROM VARIOUS SOURCES.

The legislature of Maine has enacted a law providing that commercial manures sold in that State shall have affixed to every barrel, bag, or parcel thereof, which may contain 50 pounds or upwards, a printed label, specifying the name of the manufacturer or seller, his place of business, and the percentage which it contains of soluble phosphoric acid, of insoluble phosphoric acid, and of ammonia. Dealers failing to comply with this provision, or who shall affix false labels, are to be punished by fine of \$10 for the first offence and \$20 for every subsequent offence; and any purchaser may recover in an action of debt 25 cents for every pound of soluble phosphoric acid, six cents for every pound of insoluble phosphoric, and 35 cents for every pound of ammonia, deficient. The act takes effect on the 1st of July next.

The Maine board of agriculture has directed the several agricultural societies receiving bounties from the State, to offer in premiums for the encouragement of wheat culture a sum, equal to one-fourth of the bounty so received during the years 1869, '70, '71.

During the month of December, 1868, the following entries were made at the land office at Beatrice, Nebraska: Entered by the State of Nebraska, 32,400 acres; homestead entries, 6,100 acres; pre-emptions, 3,200 acres; cash entries, 2,660 acres; land warrant entries, 860 acres; final homestead entries, 640 acres.

It is stated that the coal fields of Tennessee cover an area of over 3,000,000 acres.

A hog owned by J. M. McElheny, New Hudson, Alleghany county, New York, fed exclusively upon whey, weighed 687 pounds, dressed.

An unofficial statement of our imports from the British provinces for the last fiscal year makes the total value \$28,599,139, on which the duties collected were \$3,290,916, or 13 per cent. only; while American farmers, in the direct and indirect taxation growing out of the war of the rebellion, suffer a burden four times as great, yet a few traders would like still more of that sort of "reciprocity."

The Maryland Agricultural and Mechanical Association has recently purchased a tract of 72 acres of land, lying two miles northwest of the city of Baltimore, upon which it is contemplated holding an exhibition during the last week of October. The State and city authorities have each appropriated \$25,000 for the use of the association, and the citizens of Baltimore have also subscribed \$25,000, and it is believed that an exhibition will be had creditable to the State of Maryland and surpassing anything of the kind ever gotten up within her limits.

The township trustee of Corydon, Harrison county, Indiana, has paid out to farmers for loss of sheep by dogs for the year ending March 1st, \$398, at the rate of \$2 per head. The amounts paid out by the other townships would probably make a total of \$1,000 for the county.

Thirteen years ago a gentleman purchased 22 acres of land near Los Angeles, California, for \$200. The first year he planted nine acres of vines and fenced the entire tract with a live fence. The remaining 13 acres have since been planted in trees, of which there are bearing 212 orange trees, 100 lemon trees, 29 walnut trees, 300 apple trees, 200 peach trees, and a few lime, plum, quince, fig, &c. The nine acres of vineyard produced \$950 after paying expenses of cutting, being a net profit of over \$100 per acre; and the fruit crop from the 13 acres (including the oranges, now beginning to ripen, estimating them at the prices realized last year) amounted to \$2,650, making the net receipts from the crops produced on the 22 acres last year about \$3,000, most of the labor being performed by the owner. The live fence last year supplied a surplus of fire-wood, which was sold at good prices.

The San Diego Union states that out of 55,000 head of cattle that started from Texas during the past year for California, not over 5,000 reached that State.

J. H. Lick, Lick's Mills, Santa Clara county, California, planted acorns of the cork oak in 1858, and now has 85 trees from 15 to 20 feet high and from 8 to 10 inches in diameter.

The lumber products of the western counties of Michigan for the year 1863 are estimated as follows:

County.	Lumber.	Lath.
Muskegon	300,000,000	130,000,000
Ottawa	200,000,000	100,000,000
Oceana	70,000,000	40,000,000
Mason	65,000,000	30,000,000
St. Joseph, Holland, S. Haven, G. Traverse, &c.	20,000,000	10,000,000
Manistee	125,000,000	70,000,000
 Totals	 780,000,000	 380,000,000

In addition to the above not less than 50,000,000 shingles and a large number of staves, railroad ties, pickets, &c., were produced, making a grand total much larger than the above figures indicate.

In the Pahranagat district, in the southeastern part of the State of Nevada, distant from Austin perhaps 180 miles, is a remarkable mountain of salt about 70 miles south of the mines. It is reported to be about five miles in length and 600 feet in height. The body of salt is of unknown depth. It is chemically pure and crystalline, and does not deliquesce on exposure to atmosphere. Like rock, it requires blasting from the mine, whence it is taken in large blocks, and is as transparent as glass.

In a paper read before the Botanical Society of Edinburgh, Dr. Lindsey states that in studying the literature of Greenland lichenology, in connection with an examination and determination of the lichens collected by Robert Brown in west Greenland in the course of the exploring expedition of 1867, he was surprised to find that there was no recorded modern list of the lichens of that country, and he has accordingly drawn up a list of all found, or recorded to have been found, in Greenland up to the present day, compiled from all sources of information accessible to him, the list including 263 species and varieties.

A French chemist states that chloride of lime, if it happens to be in the slightest excess, has a tendency to give a yellow tinge to the pulp; that all energetic acids, without exception, tend to give a reddish color to the paper when exposed for a long time to the effect of the sun or of moisture, and that the least trace of iron is sufficient in a very short time to blacken the pulp. He says that he has succeeded in avoiding all these inconveniences by the use of the following mixture: For a hundred weight of wood pulp he employs 400 grams (four-fifths of a pound) of oxalic acid, which has the double advantage of bleaching the coloring matter already oxidized, and of neutralizing the alkaline principles which favor such oxidation. He adds to the oxalic acid one pound, or a little more, of sulphate of alumina, entirely deprived of iron. The principal agent in this mode of bleaching is the oxalic acid, the power of which over vegetable coloring matters is well known. The alum has no bleaching power of its own, but it forms with the coloring matter of the wood an almost colorless lake, which has the effect of increasing the brilliancy of the pulp.

According to statistics published by the chamber of agriculture and commerce of Turin it appears that the quantity of silk cocoons sold throughout Italy last year amounted to 622,473 myriagrammes* of the value of 45,327,626 francs, being an increase in quantity of 188,231 myriagrammes and in value of 16,485,158 francs over the yield of 1867. To this quantity must be added 128,849 myriagrammes brought to market but not sold, against 2,124 myriagrammes the preceding year, making the total increase 209,478 myriagrammes, and in value 18,682,526 francs. Taking into account the quantity of cocoons which were sold privately, the total production of cocoons during the year may be estimated at 1,312,228 myriagrammes, of the value of 95,543,232 francs. The best results seem to have been obtained from the Japanese varieties of silk-worm, the seed of which were imported direct from that country, producing cocoons of a greenish color. The reproduction from Japanese seed of other years did not give such good results. The lowest prices paid were 10 francs per myriagramme, at Pavia, for cocoons of inferior qualities; the highest 165 francs, at Perugia, for those of superior quality. The medium price paid for cocoons of superior quality was 104.42 francs at Castello, and for inferior quality 34.44 francs at Samo. The average price throughout the kingdom was 72.81 francs per myriagramme.

The returns of the British board of trade show that the imports of wheat and flour for the years 1867 and 1868 amounted to 17,705,707 quarters, at a cost of £50,384,115. The value of other grain importations during the same period reached £24,601,027, making an aggregate of £74,985,142. Of the above only about 500,000 cwts. were exported, the value of which is not stated.

* Myriagramme, 22.04737 pounds.

It appears from Dr. Anderson's report on the number and distribution of cinchona plants in the government grounds at Darjeeling, on the 1st of September last, that the cultivation of bark progresses. The total number in the various plantations at that date was 2,075,078, viz: *C. succiruba*, 1,118,557; *C. calisaya*, 20,354; *C. micrantha*, 29,667; *C. officinalis* and *vars.*, 901,408; *C. Pahudiana*, 5,092.

Official statistics show that in the grand duchy of Hesse there are on 556 square miles 40,691 hives of bees, being 73 hives to the square mile; in Alzey there are 238 hives to the square mile; in Offenbach 23; Prussia (not including Hanover) 38; Schwartzburg-Sondershausen 32; Bavaria 42; Sachsen-Altenburg 45; Sachsen-Meiningen 49; Schwartzburg-Rudolstadt 50; kingdom of Saxony 52; Sachsen-Weimar 56; Wurtemberg 64; Baden 67; Oldenburg 74; Hanover 72.

A royal decree in Prussia makes it unlawful to kill or confine in cages the blue-gorge, red-gorge, nightingale, hedge-sparrow, red-start, wagtail, wren, blackbird, titmouse, finch, linnet, sparrow, greenfinch, thistle-fin, wood-pecker, lapwing, swallow, church-owl, starling, crow, raven, roller, gnat-snapper, sparrow-hawk, cuckoo, wrey-neck, buzzard, hawk, and owls, with the exception of the horned owls. It is likewise interdicted to disturb the broods or to carry off the nest of these birds, or to catch them by snares, gins, bird-calls, or any similar devices. Transgressors of this order will be punished by a fine of from one to ten thalers or confinement in jail, or both. The sale of any of the birds named is also prohibited under penalty of fine or imprisonment.

The annual trade of Cuba is over \$170,000,000. In 1862 the production of the island was \$306,000,000; taxes paid in, \$37,750,000; imports \$57,400,000; exports, \$43,400,000. The rural wealth was then estimated at \$381,000,000; wealth of towns, \$170,000,000; industrial and commercial wealth, \$774,000,000. The productions in the same year were: sugar, \$62,000,000; tobacco, \$30,000,000; other items, \$37,000,000; total, \$129,000,000.

The too rapid increase of sheep in Australia is checked by boiling them for their tallow. Four hundred sheep are cut to pieces and thrown into a big boiler, steam from another boiler is turned on, and soon the carcasses are reduced to a pulp; the tallow rises to the top and is drawn off through large taps into barrels for export. The gravy and other juices, the remains of the meat, and the bones, which are so softened as to crumble easily in the hands, are given to pigs. Four thousand sheep are boiled down in a day.

METEOROLOGY.

COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS BY OBSERVERS FOR THE SMITHSONIAN INSTITUTION.

Tables showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain and melted snow, (in inches and tenths,) for February and March, 1869, at the stations and by the observers named. Daily observations at 7 a.m., and at 2 and 9 p.m.

FEBRUARY, 1869.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.								
Houlton.....	Aroostook.....	Charles H. Fernald ..	10, 13, 22	36	8	-12	19.0	5.22
Steuben.....	Washington.....	J. D. Parker.....	13	42	8	-1	25.3	2.20
Williamsburg.....	Piscataquis.....	Edwin Pitman.....	13	36	2	0	19.5	6.22
West Waterville.....	Kennebec.....	B. F. Wilbur.....	13	45	25	2	25.2	6.45
Gardiner.....	do.....	R. H. Gardiner.....	13	44	8	-5	24.9	6.75
Standish.....	Cumberland.....	John P. Moulton.....	13	49	8	0	24.3	3.51
Norway.....	Oxford.....	Howard D. Smith.....	17	47	25	-6	23.2	5.75
Cornish.....	York.....	Silas West.....	13	47	2	1	23.9	3.75
Cornishville.....	do.....	G. W. Guptill.....	13	45	28	4	24.0	6.12
Averages.....							23.3	5.11
NEW HAMPSHIRE.								
Stratford.....	Coos.....	Branch Brown.....	10	39	8	-12	18.8	5.40
Shelburne.....	do.....	F. Odell.....	22	46	8	-16	22.5	4.03
North Barnstead.....	do.....	Charles H. Pitman.....	13	46	2	5	26.8	3.55
Goffstown Centre.....	Hillsboro'.....	Alfred Colby.....	13	50	2	6	26.5	3.85
Averages.....							23.7	4.21
VERMONT.								
Lunenburg.....	Essex.....	H. A. Cutting.....	10, 13	39	8	-12	20.1	4.13
Barnet.....	Caledonia.....	B. F. Eaton, M. D.....	9	40	8	-16	17.4	3.20
North Craftsbury.....	Orleans.....	Rev. E. P. Wild.....	11	40	2	-14	18.7	7.13
Randolph.....	Orange.....	Chas. S. Paine.....	12	43	8	-17	21.9	4.60
Woodstock.....	Windsor.....	Doton & Miller.....	13	48	8	-21	19.4	4.00
Near St. Albans.....	Franklin.....	A. H. Gilmour.....	12	38	8	-15	16.7	.....
West Charlotte.....	Chittenden.....	Miss M. E. Wing.....	11	46	8	-8	24.3	4.31
Middlebury.....	Addison.....	H. A. Sheldon.....	13	40	28	-3	21.9	4.45
Brandon.....	Rutland.....	Harmon Buckland.....	9	42	2	-2	24.1	4.12
Averages.....							20.5	4.49

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASSACHUSETTS.								
Kingston	Plymouth	G. S. Newcomb	13	57	2, 8	10	30.0	3.10
Topsfield	Essex	S. A. Merriam	13	54	8	5	28.0	5.82
Lawrence	do	John Fallon	13	50	8	7	28.4	14.31?
Georgetown	do	S. A. Nelson	13	52	8	4	28.8	5.45
Milton	Norfolk	Rev. A. K. Teele	13	62	28	9	31.2	4.21
Cambridge	Middlesex	Rev. J. B. Perry	13	64	8	9	31.7	.....
North Billerica	do	Rev. Elias Nason	13	54	28	1	30.6	.....
West Newton	do	John H. Bixby	13	59	28	0	30.3	.....
New Bedford	Bristol	Samuel Rodman	13	56	2	13	32.3	4.85
Worcester	Worcester	Jos. Draper, M. D.	13	52	8	10	28.3	5.49
Mendon	do	Jno. G. Metcalf, M. D.	13	52	2, 8, 28	10	27.4	1.25
Lunenburg	do	G. A. Cunningham	13	53	8	7	27.3	2.90
Amherst	Hampshire	Prof. E. S. Snell	13	51	8	—1	28.0	4.17
Richmond	Berkshire	Wm. Bacon	13	58	8	2	26.8	5.72
Williams College	do	Prof. A. Hopkins	13	54	8	—2	28.5	3.78
Hinsdale	do	Rev. E. Dewhurst	13	47	2	4	23.7	5.10
Averages							28.8	5.09
RHODE ISLAND.								
Newport	Newport	Wm. H. Crandall	13	47	2, 6, 8, 28	18	32.4	6.84
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	13	52	28	8	27.7	4.40
Columbia	Tolland	Wm. H. Yeomans	13	64	28	8	31.2	.....
Middletown	Middlesex	Prof. John Johnston	13	63	8	9	30.0	3.84
Waterbury	New Haven	Rev. R. G. Williams	13	57	8	7	30.2	3.89
Colebrook	Litchfield	Charlotte Rockwell	13	54	28	5	25.2	1.87
Brookfield	Fairfield	Rev. S. W. Roe	13	50	8	8	29.3	7.60
Averages							23.9	4.32
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh's	13	58	8	15	36.5	7.88
South Hartford	Washington	G. M. Ingalsbe	9	48	8	—10	25.8	4.35
Garrison's	Putnam	Thomas B. Arden	13	57	8	12	31.0	2.49
Throg's Neck	Westchester	Miss E. Morris	13	58	28	14	33.2	.....
White Plains	do	O. R. Willis	15	65	28	14	32.4	.....
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	13	57	28	14	32.8	7.29
Columbia College	do	Prof. Chas. A. Joy	22	46	28	15	32.7	4.60
Flatbush	Kings	Rev. Eli T. Mack	13	58	28	15	34.2	4.13
Nyack	Queens	C. de la Verny	13	63	28	17	35.0	5.47
Newburgh	Orange	Jas. H. Gardiner	13	64	2, 8	12	31.5	2.65
Minaville	Montgomery	J. W. Bussing	13	48	8	—6	22.2	1.57
Sloansville	Schoharie	G. W. Potter	13	60	2	1	25.1	3.76
Gouverneur	St. Lawrence	Cyrus H. Russell	11	42	28	—18	20.4	5.15
North Hammond	do	C. A. Wooster	11	42	28	—8	22.6	4.90
Houseville	Lewis	Walter D. Yale	13	45	28	—8	22.4	4.25
South Trenton	Oneida	Storrs Barrows	10	44	2, 28	—4	22.2	4.55
Cazenovia	Madison	Prof. Wm. Soule	13	55	7	0	25.8	4.18
Oneida	do	S. Spooner, M. D.	12, 13	48	8	—2	26.0	4.41
Depauville	Jefferson	Henry Haas	12	40	28	—4	21.5	5.01
Oswego	Oswego	Wm. S. Malecolm	12	44	8	9	27.2	4.50
Palermo	do	E. B. Bartlett	13	45	28	—8	22.3	3.90
North Volney	do	J. M. Patrick	13	46	7	3	25.5	.....

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW YORK—Con'd.								
Ludlowville	Tompkins	C. P. Murphy	13	60	6, 8	0	27.3	.....
Nichols	Tioga	Robert Howell	13	62	8	0	28.2	.....
Newark Valley	Tioga	Rev. Sam'l Johnson	13	57	6, 8	- 8	25.9	.....
Rochester	Monroe	H. W. Mathews	12	49	23	13	29.3	4.13
Little Genesee	Allegany	Daniel Edwards	13	60	25	- 6	25.8	2.06
Suspension Bridge	Niagara	W. Martin Jones	13	50	27	11	26.5	5.75
Buffalo	Erie	Wm. Ives	12, 13	46	27	9	27.3	4.87
Averages							26.5	4.43
NEW JERSEY.								
Paterson	Passaic	Wm. Brooks	13	57	23	11	32.3	6.06
Newark	Essex	W. A. Whitehead	13	60	28	15	33.3	5.06
Trenton	Mercer	E. R. Cook	13	52	28	13	37.3	3.52
Rio Grande	Cape May	Miss J. R. Palmer	13	66	28	16	38.5	7.00
Moorestown	Burlington	Thos. J. Beans	13	64	23	13	34.7	4.86
Newton	Sussex	Thos. Ryerson, M.D.	13	52	8	7	28.9	1.88
New Germantown	Hunterdon	Arthur B. Noll	13	59	28	10	32.5	3.51
Newfield	Gloucester	E. D. Couch	14	68	28	11	36.0	.....
Greenwich	Cumberland	R. C. Sheppard	14	63	28	17	37.7	3.57
Vineland	do	John Ingram, M. D.	14	70	23	13	37.8	4.45
Averages							34.9	4.43
PENNSYLVANIA.								
Nyces	Pike	John Grathwohl	13	58	8	- 4	26.2	3.68
Fallsington	Bucks	Eben'r Hance	13	60	28	15	35.0	5.10
Philadelphia	Philadelphia	Prof. J. A. Kirkpatrick	13	61	28	17	37.6	4.49
Germantown	do	Thomas Meehan	15	56	28	15	33.2	.....
Horsham	Montgomery	Miss Anna Spencer	13	65	23	13	34.3	3.25
Plymouth Meeting	do	M. H. Corson	13	64	23	14	35.1	4.34
Dyberry	Wayne	Theodore Day	12, 13	49	8	- 6	24.7	.....
Whitehall	Lehigh	Edward Kohler	13	54	28	10	32.4	.....
Factoryville	Wyoming	Rodman Sisson	13	54	8	2	28.2	2.70
Reading	Berks	J. Heyl Kaser	13	62	23	16	35.9	.....
Parkesburg	Chester	F. Darlington, M. D.	15	54	28	12	34.3	4.35
West Chester	do	Geo. Martin, M. D.	13	66	28	13	33.6	4.20
Phenixville	do	L. Z. Coffman, M. D.	13	62	28	14	33.9	5.50
Silver Spring	Lancaster	H. G. Bruckhart	15	54	28	16	35.0	.....
Ephrata	do	W. H. Spera	13	64	23	14	35.1	4.88
Mount Joy	do	J. R. Hoffer	13	64	23	18	36.7	.....
Harrisburg	Dauphin	John Heisely, M. D.	13	59	28	18	34.9	3.50
Carlisle	Cumberland	Wm. H. Cook, M. D.	13	65	23	15	34.7	3.60
Fountain Dale	Adams	S. C. Walker	13	65	23	15	35.0	4.18
Tioga	Tioga	E. T. Bentley	13	54	6, 8	- 6	22.2	1.70
Lewisburg	Union	Prof. C. S. James	11	48	8	6	30.3	1.62
Ickesburg	Perry	Wm. E. Baker	13	67	25	10	32.2	3.86
Grampian Hills	Clearfield	Elisha Fenton	13	58	25	- 3	25.7	2.35
Johnstown	Cambria	David Peelor	13	58	28	8	31.7	.....
Franklin	Venango	Rev. M. A. Tolman	13	64	23	0	29.3	3.70
Connellsville	Fayette	John Taylor	14	68	28	2	33.0	.....
New Castle	Lawrence	E. M. McConnell	13	60	23	4	32.7	.....
Beaver	Beaver	Rev. R. T. Taylor	13, 14	57	25	11	36.0	4.00
Canonsburg	Washington	Rev. W. Smith, D. D.	13	68	27	6	33.9	2.05
Averages							32.5	3.65

Table showing the range of the thermometer, &c., for February—Continued.

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ALABAMA.								
Carlowville	Dallas	H. L. Alison, M. D.	13	74	28	27	50.9	10.82
Moulton	Lawrence	Thos. M. Peters, A. M.	21	63	28	20	43.4	3.98
Havana	Hale	S. K. Jennings, M. D.	12, 13	70	24, 28	24	49.1	9.30
Averages							47.8	8.03
FLORIDA.								
Jacksonville	Duval	A. S. Baldwin	22	79	5, 24	40	59.4	7.25
Port Orange	Volusia	Mrs. J. M. Hawks	22	85	5	40	60.0	.....
Ocala	Marion	Edward Barker	22	84	6	36	62.6	.....
Pilatka	Putnam	W. M. L. Fiske, M. D.	22	87	5	35	60.7	4.90
Averages							60.7	6.03
TEXAS.								
Houston	Harris	Miss E. Baxter	20	76	23	26	54.6	.....
Columbia	Brazoria	J. B. Bostwick	20	80	23	26	55.7	3.04
Blue Branch	Burleson	F. S. Wade	10	77	22	29	52.0	2.97
Lavacca	Calboun	L. D. Heaton	20	80	23	27	56.0	3.01
Waco	McLellan	Edwd. Merrill, M. D.	11	73	23	20	51.8	3.00
Austin	Travis	J. Van Nostrand	20	83	23	28	52.4	0.61
Averages							53.8	2.53
LOUISIANA.								
New Orleans	New Orleans	Robt. W. Foster	20	78	23	35	.....	.....
MISSISSIPPI.								
Grenada	Yalabusha	Albert Moore	21	74	28	20	49.5	5.20
Brookhaven	Lawrence	T. J. R. Keenan	20	78	23	26	51.4	10.20
Natchez	Adams	Robt. McCary	13	71	5, 23, { 24, 28 }	27	46.6	7.47
Marion C. H.	Lauderdale	Thos. W. Florer	14	78	28	18	47.5	7.70
Averages							48.8	7.64
TENNESSEE.								
Elizabethhton	Carter	Charles H. Lewis	13, 21	69	5, 24, 28	16	40.7	2.70
Tusculum College	Green	{ S. S. and Rev. W. } S. Doak	13	68	5	17	39.0	.....
Lookout Mountain	Hamilton	Rev. C. F. P. Bancroft	19	65	28	12	43.7	.....
Clarksville	Montgomery	Prof. W. M. Stewart	13	68	28	15	42.2	3.14
Trenton	Gibson	W. T. Grigsby	21	67	27	16	44.4	5.45
Memphis	Shelby	Ed. Goldsmith	12	71	23	17	44.5	3.97
Averages							42.4	3.82
KENTUCKY.								
Pine Grove	Clark	Sam'l Martin, M. D.	13	66	28	10	38.7	2.54
Lexington	Fayette	S. R. Williams	13	67	5	6	38.6	3.06
Danville	Boyle	O. Beatty	12, 13	74	28	12	44.9	1.87
Louisville	Jefferson	Mrs. L. Young	13	70	28	12	40.7	3.59
Clinton	Hickman	Rev. T. H. Clelland	13	63	27	14	40.8	3.82
Averages							40.7	2.96
OHIO.								
New Lisbon	Columbiana	J. F. Benner	13, 14	65	28	— 4	32.9	1.84
Steubenville	Jefferson	Jos. B. Doyle	13	62	28	12	36.0	2.06
Martin's Ferry	Belmont	Martin B. Shreeve	13	67	5, 27	12	34.5	2.69
Painesville	Lake	E. J. Ferris	13	64	28	6	30.6	4.65

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
OHIO—Continued.								
Gilmore	Tuscarawas	Samuel M. Moore	14	68	28	6	32.9	3.10
Milnersville	Guernsey	Rev. D. Thompson	13	67	6	3	32.3	3.85
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	13	67	28	1	30.7	3.02
Wooster	Wayne	Martin Winger	13	70	28	— 2	33.5	2.05
Gallipolis	Gallia	A. P. Rodgers	13	68	28	17	39.4	2.94
Kelley's Island	Erie	Geo. C. Huntington	13	56	28	12	30.7	2.67
Sandusky	do	Thomas Neill	13	65	28	5	32.5	3.45
North Fairfield	Huron	O. Burras	13	68	28	5	32.3	3.99
Carson	do	Mrs. M. M. Marsh	13	61	25, 28	10	32.5	2.50
Westerville	Franklin	Prof. Jno. Haywood	13	67	5	9	34.1	2.98
Marion	Marion	H. A. True, M. D.	13	65	25	6	31.6	3.15
Hillsboro'	Highland	J. McD. Mathews	13	64	28	11	34.9	3.25
Toledo	Lucas	John Trembly, M.D.	13	65	28	3	30.3	3.44
Bowling Green	Wood	John Clarke	12	69	28	3	30.9	5.69
Urbana University	Champaign	M. G. Williams	13	66	28	9	32.9	3.40
Bethel	Clermont	Geo. W. Crane	13	67	28	11	35.8	2.63
Jacksonburg	Butler	I. B. Owlsley, M. D.	13	67	28	8	34.9	3.57
Mt. Auburn Inst.	Hamilton	Prof. S. A. Norton	12, 13	68	28	11	39.3	3.20
Cincinnati	do	R. C. Phillips	12, 13	70	28	19	41.7	3.05
College Hill	do	John W. Hammitt	12	62	28	10	35.3	3.44
Averages							33.9	3.19
MICHIGAN.								
Monroe City	Monroe	Miss H. I. Whelpley	13	69	28	5	31.0	4.55
Adrian	Lenawee	L. May Helme	13	62	27	2	23.2	.....
State Ag. College	Ingham	Prof. R. C. Kedzie	12	60	5	— 4	26.7	2.95
Litchfield	Hillsdale	R. Bullard	13	62	5	4	27.5	2.85
Coldwater	Branch	N. L. Southworth	13	64	25, 28	6	28.3	1.78
Grand Rapids	Kent	E. S. Holmes, D. D. S.	12	56	4	— 1	28.0	1.88
Northport	Leelenaw	Rev. Geo. N. Smith	10	45	27	4	24.5	1.63
Homestead	Benzie	George E. Steele	12	47	28	— 4	25.4	.....
Holland	Ottawa	L. H. Streng	13	56	5	0	31.2	3.48
Otsego	Allegan	Milton Chase, M.D.	12	68	5	14	34.6	.....
Copper Falls	Keweenaw	S. H. Whittlesey	11	36	24	— 1	15.4	4.03
Penn Mine	do	Richard H. Griffith	12	40	17	— 3	20.2	.....
Averages							26.3	2.89
INDIANA.								
Aurora	Dearborn	Geo. Sutton, M. D.	13	66	27, 28	14	35.0	3.30
Vevey	Switzerland	Chas. G. Boerner	13	70	27, 28	13	38.0	4.05
Muncie	Delaware	G. W. H. Kemper, M.D.	13	66	28	5	33.9	4.40
Spiceland	Henry	Wm. Dawson	13	66	28	8	33.9	3.20
New Albany	Floyd	E. S. Crozier, M. D.	12, 13	67	28	12	39.9	2.83
Jalap	Grant	Albert C. Irwin	12	67	28	6	34.6	5.94
Knightstown	Rush	D. Deem	13	65	23	9	34.9	4.03
Indianapolis	Marion	J. V. Woolen, M. D.	13	65	23, 24, 28	9	34.0	3.70
State University	Monroe	Prof. C. M. Dodd	13	65	28	9	35.3	3.37
Merom	Sullivan	Thomas Holmes	13	65	28	8	35.2	3.28
Lafayette	Tippecanoe	J. W. Newton	12	64	28	4	32.0	3.70
Kentland	Newton	Daniel Spitter	11, 12	60	27	6	31.3	10.47?
New Harmony	Posey	John Chappellsmith	12, 13	66	28	13	41.4	3.80
Averages							35.3	4.31

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr.	12	65	28	5	31.8	2.24
Near Chicago	do	Samuel Brookes	12	60	28	3	27.2	.....
Evanston	do	Prof. Oliver Marcy	12	59	27	6	30.3	2.94
Marengo	McHenry	O. P. Rogers	12	57	5	0	27.1	1.65
King's Mills	Kane	{ Mr. and Mrs. A. Spanlding }	12	58	27, 28	-2	24.2	1.98
Louisville	Clay	D. H. Chase, M. D.			27, 28	10		.....
Belvidere	Boone	G. B. Moss	15	59	5	-8	25.3	2.68
Ottawa	La Salle	Mrs. E. H. Merwin	12	66	28	4	32.3	1.85
Winnebago	Winnebago	J. W. & Miss Tolman	12	58	27	0	24.5	2.14
Rochelle	Ogle	Daniel Carey	12	61	27, 28	-4	25.5	.....
Wyanet	Bureau	E. S. & Miss Phelps	12	68	28	-2	28.1	1.52
Tiskilwa	do	Verry Aldrich	12	62	28	0	29.8	.....
Hennepin	Putnam	Smiley Shepherd	12	66	28	0	30.0	.....
Elmira	Stark	O. A. Blanchard	12	62	5	-7	26.6	2.86
Springfield	Sangamon	G. M. Brinkerhoff	12	70	27	4	31.1	.....
Loami	do	Timothy Dudley	16	68	27	2	31.9	2.95
Dubois	Washington	Wm. C. Spencer	12	69	28	7	37.0	3.75
Waterloo	Monroe	Francis Sum	12	69	23	10	39.1	1.14
South Pass	Union	H. C. Freeman	12	68	23, 28	10	37.9	.....
Lombard University	Knox	Prof. W. Livingston	11	57	27, 28	-1	27.2	1.20
Manchester	Scott	Dr. J. & C. W. Grant	12	70	27	3	32.4	1.97
Mount Sterling	Brown	Rev. A. Duncan	12	68	27	-4	31.4	.....
Andalusia	Rock Island	E. H. Bowman, M. D.	12	68	5	-2	30.3	.....
Augusta	Hancock	S. B. Mead, M. D.	12	64	28	-2	30.1	2.57
Warsaw	do	B. Whittaker	12	67	23	-4	28.2	1.88
Averages.							30.6	2.21
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lips	12	48	28	0	25.8	2.52
Plymouth	Sheboygan	G. Moeller	12	47	27	-2	23.0	2.30
Hingham	do	Jno. De Lyser	12	50	27	-2	24.6	.....
Milwaukee	Milwaukee	L. A. Lapham, LL.D.	12	56	27	2	26.7	2.76
Appleton	Outagamie	J. C. Foye	12	47	27	-2	25.6	.....
Waupaca	Waupaca	H. C. Mead	10, 11	48	4, 24	0	24.2	.....
Embarrass	do	E. Everett Breed	12	45	27	-9	22.3	2.40
Rocky Run	Columbia	W. W. Curtis	12	50	5	-5	24.4	1.98
Madison	Dane	W. W. Daniels	12	50	27	-1	22.9	2.35
Edgerton	Rock	Henry J. Shints	12	60	5	-3	24.2	.....
Baraboo	Sauk	M. C. Waite	12	50	23, 24, 28	0	24.9	.....
New Lisbon	Juneau	J. L. Dungan	12	57	5	-17	23.9	.....
Bayfield	Bayfield	Andrew Tate	16	46	23	-12	19.8	.....
Averages.							24.0	2.39
MINNESOTA.								
Afton	Washington	{ Dr. and Mrs. B. F. Babcock.	11	43	22	-24	17.5	2.47
St. Paul	Ramsey	Rev. A. B. Paterson	12	41	27	-15	18.7	2.83
Minneapolis	Hennepin	Wm. Cheney	11, 12	42	22, 27	-18	17.6	2.80
Sibley	Sibley	{ C. W. & C. E. Woodbury.	11	39	27	-21	15.2	2.30
Koniska	McLeod	Thos. M. Young	12	40	27	-26	15.0	2.20
New Ulm	Brown	Charles Roos	{ 8, 10, 11, 16	37	22, 27	-26	15.0	2.20
Madelia	Watonwan	W. W. Murphy	7, 10	40	22	-22	15.2	3.50
Averages.							16.6	2.65

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
IOWA.								
Clinton	Clinton	Dr. J. P. Farnsworth	12	65	23, 24	— 4	27.2	5.26
Dubuque	Dubuque	Asa Horr, M. D.	12	56	5	— 2	26.0	2.24
Monticello	Jones	M. M. Moulton	12	56	5	— 8	24.5	1.13
Bowen's Prairie	do	Samuel Woodworth	11, 12	64	23	— 14	24.0	2.00
Muscatine	Muscatine	J. P. Walton	12	62	5	— 12	23.5	1.58
Fort Madison	Lee	Dan'l McCready	12	68	23, 27	— 3	23.5	2.45
Guttenberg	Clayton	Jas. P. Dickerson	12	56	5	— 16	23.2	—
Mount Vernon	Linn	Prof. A. Collins	12	59	23	— 7	23	—
Iowa City	Johnson	Prof. T. S. Parvin	12	62	5	— 8	27.0	3.90
Independence	Buchanan	Geo. Warne, M. D.	12	53	23	— 21	21.2	3.10
Near Independence	do	Mrs. D. B. Wheaton	12	58	5	— 19	19.9	3.15
Waterloo	Black Hawk	T. Steed	12	48	22, 28	— 8	23.0	—
Marble Rock	Floyd	H. Wadey	12	48	27	— 10	23.1	—
Iowa Falls	Hardin	N. Townsend	11, 12	50	23	— 10	24.2	3.97
Algona	Kossuth	I. H. Warren	11	41	22	— 14	19.2	—
Near Algona	do	Ph. Dorweiler	1, 11	40	22	— 18	17.4	2.28
Fort Dodge	Webster	C. N. Jorgensen	11	45	22	— 10	21.7	1.46
Boonsboro'	Boone	E. Babcock	12	56	27	— 9	22.7	1.84
Rolfe	Pocahontas	Oscar I. Strong	11	46	22, 27	— 12	19.2	1.93
Lizard	do	Jas. J. Bruce	10	61?	27	— 4	25.5	4.98?
Fontanelle	Adair	A. F. Bryant	12	56	27	— 6	25.3	1.68
Grant City	Sac	E. and Rosina Miller	11, 12	48	22	— 14	23.6	—
Logan	Harrison	Jacob T. Stern	12, 13, 18	48	4, 22, 27	— 4	24.6	1.40
Woodbine	do	M. E. & D. R. Witter	12	53	22	— 6	25.9	—
Averages.								
MISSOURI.								
St. Louis University	St. Louis	Rev. J. Straetmans	12	70	27	12	38.4	1.82
Allenton	do	A. Fendler, M. D.	12	77	23, 28	7	36.0	2.45
Hematite	Jefferson	John M. Smith	12	75	28	9	38.9	2.10
Rolla	Phelps	Homer Ruggles	12	76	23	1	41.6	1.57
Jefferson City	Cole	Nicolas de Wyl	12	72	23	4	37.0	—
Hermitage	Hickory	Miss Belle Moore	12	70	23	— 1	34.6	1.96
Bolivar	Polk	James A. Race	12	70	23	1	38.2	0.95
Warrensburg	Johnson	J. E. Pollock	12	70	27	0	30.4	0.50
Harrisonville	Cass	John Christian	12	64	23	— 2	33.1	1.03
St. Joseph	Buchanan	Rev. Henry Bullard	12	68	23	2	35.3	1.98
Oregon	Holt	William Kaucher	12, 13	68	23	— 5	31.2	2.51
Averages.								
KANSAS.								
Atchison	Atchison	Dr. H. B. & Miss Horn	11, 12	68	23, 27	— 4	30.9	1.65
Leavenworth	Leavenworth	J. Stayman, M. D.	12	68	23	— 6	30.7	1.84
Olathia	Johnson	W. Beckwith	12	67	23	— 4	32.1	1.30
Baxter Springs	Cherokee	Ingraham & Hyland	12	74	23	— 7	39.0	2.80
State University	Douglas	Prof. F. H. Snow	12	66	23	— 3	30.6	1.44
Holton	Jackson	Jas. Watters, M. D.	11	62	23, 27	— 3	30.2	—
Neosho Falls	Woodson	Mrs. E. W. Groesbeck	12	65	23	— 9	31.3	1.60
State Agricult'l Coll.	Riley	Prof. B. F. Mudge	12	65	23	— 4	31.3	1.22
Council Grove	Morris	A. Woodworth, M.D.	11, 12	66	23	0	34.5	0.65
Averages.								
							32.3	1.56

Table showing the range of the thermometer, &c., for February—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEBRASKA.								
Dakota.....	Dakota.....	H. H. Brown.....	8, 12.....	55.....	22.....	— 5.....	27.0.....	In.
Omaha Mission.....	Omaha Reserve.....	Rev. Wm. Hamilton.....	.....	.....	.....	.....	.....	.....
Elkhorn.....	Washington.....	John S. Bowen.....	12.....	55.....	22.....	— 2.....	27.7.....	.....
De Soto.....	do.....	Charles Seltz.....	12.....	53.....	22.....	— 6.....	26.8.....	1.48
Bellevue.....	Sarpy.....	Mrs. E. E. Caldwell.....	12.....	63.....	4.....	— 2.....	30.6.....	2.00
Glendale.....	Cass.....	Dr. A. L. & Miss Child.....	12.....	63.....	4.....	— 10.....	27.5.....	2.45
Nebraska City.....	Otoe.....	Prof. P. Zahner.....	12.....	64.....	4.....	0.....	31.7.....	2.60
Peru.....	Nemaha.....	J. M. McKenzie.....	12.....	67.....	20.....	— 3.....	30.3.....	1.05
Averages.....		.....	.....	.....	.....	.....	28.8.....	1.92

MARCH, 1860.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MAINE.								
Heulon.....	Aroostook.....	Charles H. Fernald.....	27.....	53.....	2.....	— 23.....	19.6.....	8.65
Steuben.....	Washington.....	J. D. Parker.....	28.....	50.....	6.....	— 4.....	26.4.....	3.54
Williamsburg.....	Piscataquis.....	Edwin Pitman.....	27.....	45.....	1, 6.....	— 12.....	21.4.....	4.23
West Waterville.....	Kennebec.....	B. F. Wilbur.....	27, 28.....	55.....	6.....	— 12.....	26.2.....	5.05
Gardiner.....	do.....	R. H. Gardiner.....	28.....	49.....	1.....	— 17.....	25.1.....	4.00
Standish.....	Cumberland.....	John P. Moulton.....	27.....	54.....	6.....	— 19.....	24.0.....	4.39
Norway.....	Oxford.....	Howard D. Smith ..	28.....	55.....	6.....	— 20.....	23.3.....	2.97
Rumford Point.....	do.....	Waldo Pettingill.....	27.....	50.....	6.....	— 24.....	22.7.....	3.20
Cornish.....	York.....	Silas West.....	27, 28.....	54.....	6.....	— 8.....	25.0.....	4.96
Cornishville.....	do.....	G. W. Guptill.....	27.....	46.....	5.....	— 5.....	24.4.....	5.76
Averages.....		.....	.....	.....	.....	.....	23.8.....	4.68
NEW HAMPSHIRE.								
Stratford.....	Coos.....	Branch Brown.....	28.....	48.....	1.....	— 22.....	19.4.....	3.60
Shelburne.....	do.....	F. Odell.....	27.....	59.....	2, 6.....	— 24.....	25.8.....	2.37
Goffstown Centre.....	Hillsboro'.....	Alfred Colby.....	28.....	56.....	6.....	— 1.....	26.4.....	3.40
Averages.....		.....	.....	.....	.....	.....	23.9.....	3.12
VERMONT.								
Linenburg.....	Essex.....	H. A. Cutting.....	28.....	47.....	2.....	— 23.....	19.6.....	4.45
Barnet.....	Caledonia.....	B. F. Eaton, M. D.	26.....	58.....	3.....	— 30.....	18.9.....	3.70
North Craftsbury.....	Orleans.....	Rev. E. P. Wild.....	29.....	52.....	1.....	— 17.....	19.3.....	2.74
Randolph.....	Orange.....	Charles S. Paine.....	27.....	50.....	1.....	— 27.....	20.1.....	5.83
Woodstock.....	Windsor.....	Doton & Miller.....	27.....	49.....	1.....	— 27.....	17.7.....	.....
Near St. Albans....	Franklin.....	A. H. Gilmour.....	29.....	51.....	5.....	— 29.....	18.8.....	.....
West Charlotte.....	Chittenden.....	Miss M. E. Wing.....	27.....	66.....	1.....	— 17.....	26.3.....	3.64
Middlebury.....	Addison.....	H. A. Sheldon.....	27.....	47.....	1.....	— 20.....	22.9.....	3.33
Brandon.....	Rutland.....	Harmon Buckland.....	27.....	55.....	1.....	— 14.....	27.0.....	3.40
Averages.....		.....	.....	.....	.....	.....	21.2.....	3.87
MASSACHUSETTS.								
Kingston.....	Plymouth.....	G. S. Newcomb.....	27.....	65.....	2.....	4.....	30.5.....	6.03
Topsfield.....	Essex.....	S. A. Merriam.....	27.....	57.....	6.....	— 8.....	27.2.....	6.73
Lawrence.....	do.....	John Fallon.....	28.....	53.....	6.....	— 7.....	28.1.....	7.43
Milton.....	Norfolk.....	Rev. A. K. Teele.....	27.....	64.....	1.....	4.....	32.7.....	5.17
Cambridge.....	Middlesex.....	Rev. J. B. Perry.....	27.....	68.....	1.....	0.....	32.3.....	.....

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MASSACHUSETTS—Continued.								
North Bellerica	do	Rev. Elias Nason	28	54	2	—11	28.1	.....
West Newton	do	John H. Bixby	27	62	2	—4	30.7	3.56
New Bedford	Bristol	Samuel Rodman	27	64	5	6	32.1	5.98
Worcester	Worcester	Jos. Draper, M. D.	27	55	1, 5	2	28.3	4.83
Mendon	do	Jno. G. Metcalf, M. D.	27	56	5	0	27.4	4.10
Lunenburg	do	Geo. A. Cunningham	28	56	5	—2	28.1	5.52
Amherst	Hampshire	Prof. E. S. Snell	27	54	1	—9	27.3	4.46
Richmond	Berkshire	William Bacon	28	58	1, 5	—5	27.0	4.94
Williams College	do	Prof. A. Hopkins	28	50	1	—8	25.1	4.44
Hinsdale	do	Rev. E. Dewhurst	26, 28	50	22	—5	25.2	5.72
Averages.								
RHODE ISLAND.								
Newport	Newport	Wm. H. Crandall	27	60	1, 5	10	33.3	7.05
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	27	55	5	0	26.4	5.20
Columbia	Tolland	Wm. H. Yeomans	28	64	1	2	31.6	.....
Middletown	Middlesex	Prof. John Johnson	27	61	1	—4	29.4	6.68
Waterbury	New Haven	Rey. R. G. Williams	27	55	2	—4	29.1	5.02
Colebrook	Litchfield	Charlotte Rockwell	28	54	5	—6	24.7	4.68
Brookfield	Fairfield	Rev. S. W. Roe	28	60	2	—6	31.6	8.10
Averages.								
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh's	27	71	5	11	36.5	8.32
South Hartford	Washington	G. M. Ingalsbe	28	58	1	—17	26.3	5.75
Garrison's	Putnam	Thomas B. Arden	27	58	1, 5	5	34.0	6.58
Throg's neck	West Chester	Miss E. Morris	27	58	5	8	34.1	.....
Deaf and Dumb Inst.	New York	Prof. O. W. Morris	28	62	5	9	34.1	5.84
Columbia College	do	Prof. Chas. A. Joy	27	61	5	9	34.0	3.98
Flat Bush	Kings	Rev. Eli T. Mack	27	58	5	9	31.3	4.30
Nyack	Queens	C. de la Verny	28	72	5	12	37.3	6.00
Newburgh	Orange	James H. Gardiner	27, 28	57	1, 5	4	33.3	1.32
Minaville	Montgomery	J. W. Bussing	14	49	1	—4	24.7	3.00
Sloansville	Schoharie	G. W. Potter	14, 28	50	5	—4	24.0	6.27
Gouverneur	St. Lawrence	C. H. Russell	28, 29	48	1	—12	24.1	2.50
North Hammond	do	C. A. Wooster	28	54	7, 22	—5	23.9	1.96
Houseville	Lewis	Walter D. Yale	25	50	4, 5, 21, 22	—4	23.4	4.46
Leyden	do	C. C. Merriam	28	47	4	5	28.2	4.65
South Trenton	Oneida	Storrs Barrows	28	44	22	—6	21.9	4.87
Cazenovia	Madison	Prof. Wm. Soule	28	50	22	—1	25.9	.....
Oneida	do	S. Spooner, M. D.	28	53	22	0	27.0	3.45
Depauville	Jefferson	Henry Haas	28	54	5, 22	0	24.8	4.95
Oswego	Oswego	Wm. S. Malcolm	28	49	22	4	27.4	4.10
Palermo	do	E. B. Bartlett	28	48	22	—3	23.2	1.93
North Volney	do	J. M. Patrick	28	51	21, 22	4	26.3	.....
Ludlowville	Tompkins	C. P. Murphy	28	57	6	6	27.6	.....
Waterburg	do	D. Trowbridge	28	55	22	—10	22.9	.....
Nichols	Tioga	Robert Howell	28	57	22	—2	29.0	.....
Newark Valley	do	Rev. Sam'l Johnson	28	54	22	—8	26.2	2.15
Rochester	Monroe	H. W. Mathews	26	52	5	3	26.4	2.27

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
NEW YORK—Con'd.				°	°	°	°	In.
Little Genesee.....	Allegany.....	Daniel Edwards.....	28	62	5	-18	25.7	2.05
Suspension Bridge	Niagara	W. Martin Jones.....	28	52	5	2	26.2	.....
Buffalo.....	Erie.....	William Ives.....	28	64	5	2	27.7	2.69
Averages.....							27.9	4.06
NEW JERSEY.								
Paterson.....	Passaic.....	William Brooks.....	27, 28	66	1	1	32.9	5.40
Newark.....	Essex.....	W. A. Whitehead.....	27	63	1	6	34.4	4.67
New Brunswick.....	Middlesex.....	I. E. Hasbrouck.....	27	60	1	5	33.6	3.74
Trenton.....	Mercer.....	E. R. Cook.....	27, 28	64	1	8	39.9	4.79
Rio Grande.....	Cape May.....	Mrs. J. R. Palmer.....	27	66	5	8	37.0	4.88
Moorestown.....	Burlington.....	Thomas J. Beans.....	14	68	1	9	36.5	4.63
Newton.....	Sussex.....	Thos. Ryerson, M. D.....	28	60	5	3	31.5	4.89
New Germantown	Hunterdon.....	Arthur B. Noll.....	27	61	1	— 2	37.4	4.24
Newfield.....	Gloucester.....	E. D. Couch.....	27	66	1	9	36.4	.....
Greenwich.....	Cumberland.....	R. C. Sheppard.....	27	66	5	13	38.4	4.64
Vineland.....	do.....	John Ingram, M. D.....	27, 28	68	5	9	37.7	3.71
Averages.....							36.0	4.56
PENNSYLVANIA.								
Nyces.....	Pike.....	John Grathwohl.....	28	58	22	— 4	28.6	5.21
Fallsington.....	Bucks.....	Ebenezer Hance.....	27, 28	65	1	6	37.0	5.29
Philadelphia.....	Philadelphia.....	{ Prof. J. A. Kirk- } patrick.....	27	63	5	14	38.9	5.21
Germantown.....	do.....	Thomas Meehan.....	28	65	5	8	36.5	.....
Horsham.....	Montgomery.....	Miss Anna Spencer.....	27	65	1	6	36.5	4.57
Plymouth Meeting	do.....	M. H. Corson.....	27	63	5	11	36.4	4.62
Dyberry.....	Wayne.....	Theodore Day.....	28	60	5	— 8	25.5	5.15
Whitehall.....	Lehigh.....	Edward Kohler.....	27, 28	58	1	3	33.9	.....
Factoryville.....	Wyoming.....	Rodman Sisson.....	28	60	5	0	28.2	3.43
Reading.....	Berks.....	J. Heyl Raser.....	27	64	5	13	38.3	.....
Parkesburg.....	Chester.....	Dr. F. Darlington.....	27	64	1	9	36.6	4.35
West Chester.....	do.....	Dr. George Martin.....	27, 28	62	5	9	35.8	4.03
Phenixville.....	do.....	Dr. I. Z. Coffman.....	27	61	1	9	37.5	4.25
Silver Spring.....	Lancaster.....	H. G. Bruckhart.....	14	67	5	10	37.0	.....
Ephrata.....	do.....	W. H. Spera.....	27	66	1, 7 22	14	36.6	4.56
Mount Joy.....	do.....	J. R. Hoffer.....	14	69	5	14	39.4	.....
Harrisburg.....	Dauphin.....	Jno. Heisely, M. D.....	27	61	5	13	36.5	4.76
Carlisle.....	Cumberland.....	Wm. H. Cook, M. D.....	14	70	5	10	37.9	5.75
Fountain Dale.....	Adams.....	S. C. Walker.....	16	65	1, 5	13	37.6	4.43
Lewisburg.....	Union.....	Prof. C. S. James.....						
Ickesburg.....	Perry.....	William E. Baker.....	14	65	5	8	34.9	4.89
Grampian Hills.....	Clearfield.....	Elisha Fenton.....	28	57	5	—10	25.7	4.57
Johnstown.....	Cambria.....	David Peelor.....	28	56	7	8	32.2	.....
Franklin.....	Venango.....	Rev. M. A. Tolman.....	28	66	7	0	28.9	4.45
Connellsburg.....	Fayette.....	John Taylor.....	26, 28	68	7	2	32.9	.....
New Castle.....	Lawrence.....	E. M. McConnell.....	28	67	16	2	31.3	.....
Beaver.....	Beaver.....	Rev. R. T. Taylor.....	28	70	16	10	35.6	4.23
Canonsburg.....	Washington.....	Rev. W. Smith, D. D.....	26	71	7	6	34.7	3.87
Averages.....							34.5	4.61

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MARYLAND.				○	○	○	○	In.
Woodlawn	Cecil	Jas. O. McCormick	27	70	5	10	37.3	5.20
Annapolis	Ann Arundel	Wm. R. Goodman	27	68	5	13	42.1	4.36
St. Inigoes	St. Mary's	Rev. J. Stephenson	27, 29	64	5	15	40.7	4.39
Frederick	Frederick	Jno. K. Hanshew	14, 27	69	5	15	42.6	-----
Emmitsburg	do	Eli Smith	27	70	5	8	37.7	-----
Mt. St. Mary's Coll.	do	Prof. C. H. Jourdan	27	63	5	11	36.9	5.62
Averages.							39.6	4.89
DIST. OF COLUMBIA.								
Washington	Washington	Smithsonian Instit'n.	27	65	7	16	40.7	3.23
VIRGINIA.								
Johnsontown	Northampton	C. R. Moore	14	67	7	18	43.2	2.80
Hampton	Elizabeth City	James M. Sherman	14	68	7	18	44.0	3.00
Zuni Station	Isle of Wight	Robert Binford	14, 29	72	7	19	46.6	2.32
Bacon's Castle	Surry	B. W. Jones	15, 27	75	7	19	46.9	-----
Comorn	King George	E. Tayloe	14, 27	70	5	16	42.1	1.95
Mt. Solon	Augusta	Jas. T. Clarke, M. D.	14	74	7	10	43.9	3.15
Staunton	do	J. C. Covell	14	67	6, 7	14	40.7	5.06
Lexington	Rockbridge	W. H. Ruffner	27	73	1	17	45.0	3.78
Lynchburg	Bedford	Chas. I. Meriwether	14	67	7	18	47.6	-----
Snowville	Pulaski	J. W. Stalmaker	14, 27	72	7	4	41.5	11.50
Wytheville	Wythe	Rev. Jas. A. Brown	25	76	7	— 1	40.6	3.15
Averages.							43.8	4.08
WEST VIRGINIA.								
White Day	Monongalia	W. H. Sharp, M. D.	27	70	7	12	30.4	-----
Weston	Lewis	B. Owen	28	71	7	4	37.4	-----
Cabell C. H.	Cabell	C. L. Roffe	31	58	6	16	40.2	2.70
Averages.							36.0	2.70
NORTH CAROLINA.								
Kenansville	Duplin	Rev. Jas. M. Sprunt	15	83	7	20	53.3	2.95
Goldboro'	Wayne	E. W. Adams, A. M.	15, 27	80	7	19	53.0	2.95
Raleigh	Wake	Miss M. H. Taylor	14	80	7	18	48.2	3.70
Oxford	Granville	W. R. Hicks, M. D.	14	76	1	12	47.7	3.35
Trinity College	Randolph	Edward D. Pearsall	14	73	1, 7	24	46.9	2.80
Albemarle	Stanley	F. J. Kion	14	78	7	12	48.4	4.75
Statesville	Iredell	Thomas A. Alison	14	74	1, 7	10	43.8	3.50
Asheville	Buncombe	E. J. Aston	26, 27	70	7	12	43.9	3.70
Do.	do	J. T. E. Hardy, M. D.	26	72	7	8	44.3	-----
Averages.							47.7	3.46
SOUTH CAROLINA.								
Aiken	Barnwell	John H. Cornish	15, 27	75	1	25	53.3	2.32
Gowdysville	Union	Charles Petty	14, 15	77	1, 7	20	53.3	2.58
Camden	Kershaw	Colin Macrae	14	74	1	16	51.5	2.36
Averages.							52.7	2.42
GEORGIA.								
Atlanta	Fulton	F. Deckner & Son	27, 31	76	1	16	49.7	5.85
Macon	Bibb	Prof. J. F. Adams	27, 31	78	1	25	55.4	2.13
Averages.							52.6	3.99

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
ALABAMA.								
Carlowville	Dallas	H. L. Alison, M. D.	31	84	1	30	57.7	5.70
Moulton	Lawrence	Thos. M. Peters, A. M.	31	72	1, 7	22	48.7	3.77
Greene Springs	Hale	H. Tutwiler, LL. D.	31	83	1	20	52.7	3.25
Havana	do	S. K. Jennings, M. D.	31	80	1	22	55.0	4.00
Averages							53.5	4.18
FLORIDA.								
Jacksonville	Duval	A. S. Baldwin, M. D.	29, 31	84	1	32	62.8	2.40
Port Orange	Volusia	Mrs. J. M. Hawks	29	82	1	34	65.5	.....
Ocala	Marion	Edward Barker	25, 28	81	1	30	69.7	.....
Pilatka	Putnam	W. M. L. Fiske, M. D.	30	85	1	32	64.0	3.44
Averages							65.5	2.92
TEXAS.								
Gilmer	Upsher	J. M. Glasco	14, 31	87	5	28	58.0	4.14
Houston	Harris	Miss E. Baxter	20, 31	84	5	37	62.3	.....
Columbia	Brazoria	J. B. Bostwick	30	88	6	35	64.9	1.92
Blue Branch	Burleson	F. S. Wade	29	84	15	31	60.4	5.30
Lavaca	Calhoun	L. D. Heaton	28	90	15	38	61.4	2.40
Waco	McLellan	Edw'd Merrill, M. D.	29	94	15	27	58.9	4.50
Austin	Travis	J. Van Nostrand	29	88	15	29	59.9	3.51
Averages							60.8	3.63
LOUISIANA.								
New Orleans	New Orleans	Robert W. Foster	31	82	5	41	.....	.....
MISSISSIPPI.								
Grenada	Yalabusha	Albert Moore	31	86	5	24	53.5	5.10
Natchez	Adams	Robert McCary	31	77	1	27	57.6	6.89
Marion C. H.	Lauderdale	Thos. W. Florer	30, 31	82	1	18	55.3	3.10
Averages'							55.5	5.03
TENNESSEE.								
Elizabethtown	Carter	Chas. H. Lewis	14, 27	72	7	6	43.8	2.95
Tusculum College	Green	{ S. S. and Rev. W. } S. Doak.	27	68	6	16	45.3	1.00
Clarksville	Montgomery	Prof. W. M. Stewart	27	77	5	15	44.4	5.07
Trenton	Gibson	W. T. Grigsby	31	76	5	20	47.0	5.63
Memphis	Shelby	Ed. Goldsmith	31	82	1, 7	22	47.5	6.37
Averages							45.6	4.08
KENTUCKY.								
Pine Grove	Clark	Dr. Samuel Martin	27	70	7	8	39.0	3.48
Lexington	Fayette	S. R. Williams	28	70	7	9	39.7	4.39
Danville	Boyle	O. Beatty	27	75	7	10	44.6	3.50
Louisville	Jefferson	Mrs. L. Young	28	75	6	9	40.2	4.66
Clinton	Hickman	Rev. T. H. Clellan.	27	77	5	15	42.4	5.69
Averages							41.2	4.34
OHIO.								
New Lisbon	Columbiana	J. F. Benner	28	65	1	— 6	30.4	4.12
Steubenville	Jefferson	Jos. B. Doyle	28	66	7, 16	10	34.6	2.77
Martin's Ferry	Belmont	M. B. Shreve	26	68	1	9	34.9	3.06
Painesville	Lake	E. J. Ferris	28	64	16	10	29.1	4.28

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
OHIO—Continued.								
Gilmore	Tuscarawas	Samuel B. Moore	28	68	1	6	36.0	4.00
Milnerville	Guernsey	Rev. D. Thompson	27	64	16	— 1	32.6	3.24
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	28	69	16	3	29.6	3.89
Wooster	Wayne	Martin Winger	28	70	1, 16	— 4	32.3	2.30
Gallipolis	Gallia	A. P. Rodgers	27	68	7	7	38.4	2.99
Kelley's Island	Erie	Geo. C. Huntington	28	62	5, 7	8	29.7	2.45
Sandusky	do	Thos. Neill	28	68	7	5	30.1	2.67
Mt. Fairfield	Huron	O. Burras	28	71	7	0	31.3	3.50
Carson	do	Mrs. M. M. Marsh	28	68	7	4	31.3	.....
Westerville	Franklin	Prof. Jno. Haywood	28	72	6	7	33.8	4.59
Marion	Marion	H. A. True, M. D.	28	67	7	— 1	30.3	4.65
Hillsboro'	Highland	J. McD. Mathews	28	67	6	4	34.3	4.14
Toledo	Lucas	Jno. Trembly, M. D.	29	58	5, 17	4	28.3	3.63
Bowling Green	Wood	John Clarke	28	73	16	— 5	29.9	2.54
Urbana University	Champaign	M. G. Williams	28	71	5	3	32.0	5.73
Bethel	Clermont	Geo. W. Crane	28	67	6	3	34.7	3.50
Jacksonburg	Butler	T. B. Owsley, M. D.	28	68	6	1	34.4	6.82
Mt. Auburn Inst	Hamilton	Prof. S. A. Norton	28	71	5	9	38.0	5.84
Cincinnati	do	G. W. Harper	28	70	6	5	34.0	5.06
Do.	do	R. C. Phillips	28	72	6	10	41.3	5.14
College Hill	do	Jno. W. Hammitt	29	70	6	2	35.8	8.38
Averages .....	.....	.....	.....	.....	.....	.....	33.1	4.14
MICHIGAN.								
Monroe City	Monroe	Miss H. Whelpley	29	60	5	0	28.8	3.20
State Agricult'l Coll.	Ingham	Prof. R. C. Kedzie	28, 29	62	11	— 2	27.6	2.55
Litchfield	Hillsdale	R. Bullard	28	63	6	— 2	26.1	2.22
Coldwater	Branch	N. L. Southworth	28	63	8	— 18	.....	.....
Grand Rapids	Kent	E. S. Holmes, D.D.S.	29	66	7	4	29.1	.....
Northport	Leelanau	Rev. Geo. N. Smith	25	52	4	— 2	24.5	.....
Homestead	Benzie	Geo. E. Steele	25	59	6	0	25.8	.....
Pleasanton	Manistee	J. D. Millard	29	61	4	— 1	24.0	2.20
Muskegon	Muskegon	H. A. Pattison	29	64	4	6	30.1	.....
Otsego	Allegan	Milton Chase, M. D.	29	70	6	6	31.6	.....
Copper Falls	Keewenaw	Dr. S. H. Whittlesey	25	53	4	— 13	17.1	2.15
Penn Mine	do	Rich'd H. Griffith	26	59	4	— 10	19.8	.....
Ontonagon	Ontonagon	Edwin Ellis, M. D.	26, 27, 28	56	11	— 12	21.1	.....
Averages .....	.....	.....	.....	.....	.....	.....	25.5	2.46
INDIANA.								
Vevay	Switzerland	Chas. G. Boerner	27	71	5	6	37.9	5.40
Muncie	Delaware	G. W. H. Kemper, M.D.	28	76	6	1	32.9	4.59
Spiceland	Henry	Wm. Dawson	28	71	6	0	33.3	5.13
New Albany	Floyd	Dr. E. S. Crozier	27	81	6	5	39.9	2.56
Columbia City	Whiteley	{ Dr. F. and Miss L. McCoy. }	28	78	12	0	30.0	.....
Jalapa	Grant	Albert C. Irwin	28	75	6	5	32.8	3.06
Knightstown	Rush	D. Deem	28	71	6	— 1	33.3	4.00
Indianapolis	Marion	J. V. Woolen, M. D.	28	66	6	0	33.2	4.57
State University	Monroe	Prof. C. M. Dodd	27	66	6	2	35.5	6.29
Merom	Sullivan	Thomas Holmes	27, 28	68	6	0	35.7	4.03
Lafayette	Tippecanoe	J. W. Newton	27, 28	66	6	— 2	31.9	4.50
Kentland	Newton	Daniel Spitter	29	66	17	— 5	31.7	3.85

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
INDIANA—Cont'd.								
New Harmony	Posey	John Chappellsmith.	27	73	6	7	39.5	5.05
Harveysburg	Fountain	Dr. B. C. Williams.	27	72	6	0	34.8	3.90
Averages							34.5	4.38
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr.	30	68	6	3	32.4	1.33
Near Chicago	do	Samuel Brookes	29	66	16	—4	27.4	.....
Evanston	do	Prof. Oliver Marcy	29	60	6	3	30.6	2.07
Marengo	Henry	O. P. Rodgers	27	58	5, 6	0	29.3	.....
Golconda	Pope	Wm. V. Eldredge	27	83	6	10	50.9	9.40
King's Mills	Kane	{ Mr. and Mrs. A. } Spatulding.	29	60	6	—4	26.3	0.69
Louisville	Clay	D. H. Chase, M. D.	27, 29	72	6	5	37.8	8.25
Sandwich	DeKalb	N. E. Ballou, M. D.	27	60	6	—5	27.8	0.93
Belvidere	Boone	G. B. Moss	27	60	6	—4	27.7	1.76
Ottawa	La Salle	Mrs. E. H. Merwin	27	65	5	6	33.5	1.38
Winnebago	Winnebago	J. W. & Miss Tolman	29	62	6	—5	27.8	0.95
Rochelle	Ogle	Daniel Carey	27	60	6	—6	28.4	.....
Wyanet	Bureau	E. S. & Miss Phelps	27	65	6	—5	30.5	1.15
Tiskilwa	do	Verry Aldrich	27, 30	60	6	—3	30.8	.....
Hennepin	Putnam	Smiley Shepherd	27	66	6	—1	31.0	.....
Elmira	Stark	O. A. Blanchard	27	62	6, 16	—7	27.8	1.64
Peoria	Peoria	Fred'k Brendel	27	69	6, 16	—2	31.6	1.61
Springfield	Sangamon	G. M. Brinkerhoff	27	74	6	—2	34.6	.....
Loami	do	Timothy Dudley	27	74	6	—3	33.6	1.90
Dubois	Washington	Wm. C. Spencer	27	76	5	—6	37.7	4.61
Waterloo	Monroe	Francis Sum	27	74	6	6	40.8	2.80
South Pass	Union	H. C. Freeman	27	76	5, 6	6	39.8	.....
Lombard University	Knox	Prof. W. Livingston	28	66	6	—6	30.0	1.30
Manchester	Scott	Dr. J. & C. W. Grant	27	74	6	—2	34.1	2.43
Mt. Sterling	Brown	Rev. A. Duncan	27	72	6	—4	32.2	.....
Andalusia	Rock Island	E. H. Bowman, M. D.	30	66	6	—5	31.9	.....
Augusta	Hancock	S. B. Mead, M. D.	28	67	6	—5	32.6	0.95
Warsaw	do	B. Whitaker	27	75	6	—6	32.1	1.56
Averages								
WISCONSIN.								
Manitowoc	Manitowoc	Jacob Lips	28	53	4	—6	26.2	0.75
Plymouth	Sheboygan	G. Moeller	29	59	4	—8	24.6	0.70
Hingham	do	John De Lyser	29	58	4	—5	25.4	.....
Milwaukee	Milwaukee	I. A. Lapham, LL.D.	29	62	4, 6	—1	27.7	1.17
Appleton	Outagamie	J. C. Foye	29	57	4	—5	27.6	.....
Emarrass	Waupaca	E. Everett Breed	28	59	11	—14	24.3	.....
Rocky Run	Columbia	W. W. Curtis	29	62	6	—8	26.9	1.13
Madison	Dane	W. W. Daniels	29	59	4	—8	25.5	0.79
Edgerton	Rock	Henry J. Shints	23	60	4	—7	23.4	.....
Baraboo	Sauk	M. C. Waite	29	62	4	—6	26.3	1.75
New Lisbon	Juneau	J. L. Dungan	29	66	4	—15	25.0	.....
Averages								
MINNESOTA.								
Afton	Washington	{ Dr. & Mrs. B. F. } Babcock.	28	54	4	—20	20.7	0.47
St. Paul	Ramsey	Rev. A. B. Paterson	28	55	4	—18	21.3	0.96
Minneapolis	Hennepin	Wm. Cheney	28	54	4	—23	20.3	0.96

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
MINNESOTA—Con'd.								
Sibley	Sibley	{ C. W. & C. E. Woodbury	25, 28	49	4	—26	18.3	0.95
Koniska	McLeod	Thos. M. Young	25	45	4	—26	17.5	2.15
New Ulm	Brown	Charles Roos	28	49	6	—20	19.7	0.96
Madelia	Watowwan	W. W. Murphy	28	50	4, 6	—24	17.7	1.05
Averages .....	.....	.....	.....	.....	.....	.....	29.1	2.26
IOWA.								
Clinton	Clinton	Dr. J. P. Farnsworth	27	65	6	—8	28.9	1.75
Dubuque	Dubuque	Asa Horr, M. D	28, 29	63	4	—5	29.1	0.89
Monticello	Jones	M. M. Moulton	28	65	6	—10	28.2	.....
Bowen's Prairie	do	Samuel Woodworth	27	66	6	—12	27.4	0.45
Fort Madison	Lee	Daniel McCready	27	68	4, 6, 16	—3	32.6	1.68
Guttenberg	Clayton	Jas. P. Dickerson	27, 28	62	6, 16	—10	26.3	.....
Mount Vernon	Linn	Prof. A. Collins	27, 29	66	4, 6	—8	27.9	.....
Iowa City	Johnson	Prof. T. S. Parvin	28	72	6	—12	30.3	0.59
Independence	Buchanan	Geo. Warne, M. D	27	63	6	—14	25.6	1.30
Near Independence	do	Mrs. D. B. Wheaton	27	64	6	—17	24.6	2.05
Waterloo	Black Hawk	T. Steed	29	66	6	—14	26.2	.....
Rockford	Floyd	H. Wadey	27	62	6	—14	24.6	0.50
Iowa Falls	Hardin	N. Townsend	27	66	4	—12	26.8	0.83
Algona	Kossuth	I. H. Warren	28	56	4, 6	—16	22.2	.....
Near Algona	do	Ph. Dorweiler	28	49	4	—18	19.5	.....
Fort Dodge	Webster	C. N. Jorgensen	28	64	6	—16	23.3	0.18
Rolfe	Pocahontas	Oscar I. Strong	28	57	6	—21	21.9	0.43
Fontanelle	Adair	A. F. Bryant	27, 28	68	6	—12	30.7	0.31
Grant City	Sac	Mr. & Mrs. E. Miller	28	68	6	—15	26.4	0.43
Logan	Harrison	Jacob T. Stern	28	66	6	—8	31.5	0.50
Woodbine	do	M. E. & D. R. Witter	28	67	6	—8	20.5	.....
Averages .....	.....	.....	.....	.....	.....	.....	26.4	0.85
MISSOURI.								
St. Louis University	St. Louis	Rev. Jno. Straetmaus	27	75	6	7	39.8	2.73
Allenton	do	A. Fendler	27	84	5, 6	5	39.1	4.21
Hematite	Jefferson	John M. Smith	27	81	5	5	40.9	5.90
Rolla	Phelps	Homer Ruggles	27	82	6	10	40.9	3.24
Jefferson City	Cole	Nicolas De Wyl	27	80	6	6	40.0	.....
Hermitage	Hickory	Miss Belle Moore	31	78	6, 15	6	38.8	2.91
Bolivar	Polk	James A. Race	27, 31	77	15	7	41.8	4.90
Warrensburg	Johnson	J. E. Pollock	27, 28	76	6, 15	0	39.9	2.22
Harrisonville	Cass	John Christian	31	78	15	0	37.8	1.35
St. Joseph	Buchanan	Rev. Henry Bullard	27, 28	70	15	6	39.2	1.04
Oregon	Holt	Wm. Kaucher	28	69	15	—3	36.2	1.28
Averages .....	.....	.....	.....	.....	.....	.....	39.5	2.98
KANSAS.								
Atchison	Atchison	{ Dr. H. B. & Miss C. Horn	27, 31	70	15	—2	36.0	0.95
Leavenworth	Leavenworth	Dr. J. Stayman	31	80	15	—2	35.7	1.03
Baxter Spring	Cherokee	Ingraham & Hiland	31	82	15	6	43.0	2.85
Lawrence	Douglas	Prof. H. F. Snow	31	80	15	0	35.1	1.15
Holton	Jackson	James Watters, M. D	31	80	15	—2	37.0	.....
Le Roy	Coffee	J. G. Shoemaker	31	76	15	2	38.9	1.42
Neosho Falls	Woodson	Mrs. E. W. Groesbeck	31	82	15	1	36.8	1.90

Table showing the range of the thermometer, &c., for March—Continued.

Stations, &c.	Counties.	Observers.	Date.	Max. temp.	Date.	Min. temp.	Mean temp.	Rain fall.
KANSAS—Continued.								
State Agricult'l Coll.	Riley	Prof. B. F. Mudge ..	31	72	15	— 2	35.7	1.06
Council Grove	Morris	A. Woodworth, M. D.	31	80	15	1	39.6	1.85
Averages .....	.....	.....					37.5	1.53
NEBRASKA.								
Dakota	Dakota	H. H. Brown	28	68	6	— 8	31.6	.....
Omaha Mission	Omaha Reserve ..	Rev. Wm. Hamilton ..	27	68	6	— 5	33.7	0.30
Elkhorn	Washington	John S. Bowen	28	68	6	— 4	32.0	.....
De Soto	do	Charles Seltz	28	66	6	— 9	31.3	0.28
Bellevue	Sarpy	Mrs. E. E. Caldwell ..	28	69	6	0	34.8	.....
Glendale	Cass	Dr. A. L. & Miss Child ..	28	70	6	— 5	32.6	0.60
Nebraska City	Otoe	Prof. P. Zahner	27, 28	70	6	— 2	40.8	1.05
Peru	Nemaha	J. M. McKenzie	28	69	6	— 4	33.3	.....
Decatur	Burt	Dr. S. C. Case	28	69	6	— 2	32.6	0.63
Averages .....	.....	.....					33.6	0.41
UTAH.								
Wanship	Summit	Thos. Bullock	12	56	1	15	36.9	.....
CALIFORNIA.								
Murphys	Calaveras	Ephraim Cutting	11	72	31	28	50.0	6.13

NOTES OF WEATHER FOR FEBRUARY, 1869.

Steuben, Maine.—Faint auroras, 2d, 8th, 10th; severe storms of snow, hail, and ending with rain, 16th, 27th.

Williamsburg, Maine.—February snowfall, 55.25 inches; 56 inches deep now.

West Waterville, Maine.—Worst storm of season; 17.5 inches snow 26th, blocking roads. February snowfall, 45 inches; now fully four feet deep on a level.

Gardiner, Maine.—Auroras 2d, 8th, 18th; lightning and thunder during a northeast snow and hail-storm 4th; mean heat of February for 33 years, $20^{\circ}.59$; this February, $24^{\circ}.54$. Average moisture for 33 years, 3.27 inches; this February, 6.75 inches; but one equals it, February, 1853, when it was 9.47 inches. Snowfall this month, 34.5 inches.

Standish, Maine.—Snow in woods, 30 inches; most storms ended in rain.

Lisbon, Maine.—Sleet 15th, breaking down trees, and stopping cars till 17th.

Norway, Maine.—Snow-storm 3d, with gale and hail 4th; sharp lightning and heavy thunder at 2 a. m.; deepest snow of winter, 4 feet, 26th and 27th.

Cornishville, Maine.—Average heat of February for 40 years, $18^{\circ}.50$; this February, $23^{\circ}.99$; snowfall 43 inches deep, and solid as March enters.

Stratford, N. H.—Severe snow-storm, 19 inches, 3d, 4th, 5th; snowed on 19 days in February, 54 inches; and is now four to five feet deep in the woods.

Shelburne, N. H.—Good sleighing from November 9 to February 3, when the snow drifted, and its depth (five to six feet) stopped lumbering; in all 98.6 inches since October.

Antrim, N. H.—Hail, thunder and vivid lightning, 4th. Snow fell on 13 days in February, and on 30 this winter.

Goffstown Center, N. H.—Heavy thunder and sharp lightning 3d.

Lunenburg, Vt.—A snowy month; four feet on cleared land and five in the woods.

Barnet, Vt.—More snow on the ground than ever known before; it is light and drifts badly.

North Craftsbury, Vt.—Great snow-storm 3d, 4th; snow five feet in the woods, badly drifted; mails behind, and wells beginning to fail.

Randolph, Vt.—Snow-storms 3d and 4th, 18th, 26th and 27th; hail, sleet, and snow 23d; snowfall in February, 37.5 inches.

Woodstock, Vt.—Snow or rain on 17 days; 40 inches snow in February.

West Charlotte, Vt.—Frequent snow, hail, and rain storms.

Brandon, Vt.—A stormy month; snow drifted badly, with a sharp crust.

Kingston, Mass.—Aurora (evening) and thunder, (night,) 3d.

Georgetown, Mass.—Gale, thunder and lightning, 3d, at night; blue birds and robins 12th to 23d, few since; only wholly clear day 28th.

New Bedford, Mass.—Month very mild; little frost in ground, or ice in harbor or river; and only .75 inch snowfall.

Worcester, Mass.—Stormy all day, then thunder-storm, 3d; linnets 23d.

Lunenburg, Mass.—Average heat of February for 30 years, 26°.38; of 1868, 18°.92; of 1869, 27°.60.

Amherst, Mass.—Snow, hail, rain, 3d, 4th; hail, rain, 14th, 15th; rain and freeze 23d; snow 26th; winds and drifts 27th.

Richmond, Mass.—On 3d, snow and gale all day; at night heavy thunder, lightning, hail, and rain; rain, hail, snow, 15th, loading trees heavily.

Hinsdale, Mass.—A stormy, squally month; much snow and wind.

Providence, R. I.—On 3d, 6 to 10 a. m., snow, then rain till 9 p. m., and at midnight lightning, thunder, and rain. February 6°.45 warmer than in 1868.

Pomfret, Ct.—Thunder, vivid lightning, rain, hail, covering trees with ice, 3d. This February warmer than last, and above the average of the 16 last past, with little snow.

Columbia, Ct.—Snow, rain, sleet, thunder, lightning, 3d; bluebirds 24th.

Waterbury, Ct.—Snow, hail, rain, thunder, lightning, 3d; auroras 4th, 5th.

Brookfield, Ct.—Heavy thunder-storm 3d; auroras 5th, 11th; bluebirds 16th; robins 28th; best sleighing this winter; month unusually mild.

Moriches, N. Y.—At 9 p. m. on 3d vivid lightning in south, with some thunder; faint, low auroras 11th, 19th. An unusually mild winter.

South Hartford, N. Y.—Month unprecedentedly warm and mild; no thaw or rain of note; three months excellent sleighing; 35 inches snow in February.

Garrison's, N. Y.—Heavy thunder-storm from northeast 3d; month moderately and uniformly cold; ground covered with snow; little frost in the ground.

Nyack, N. Y.—Thunder-shower 3d; auroras 4th, 11th; river yet open.

Newburgh, N. Y.—Thunder, vivid sheet-lightning, hail and rain, 3d.

North Hammond, N. Y.—Month changeable; largest amount of snow on ground in several years; snowfall this month nearly four feet.

Depauville, N. Y.—Faint aurora 9th; since 10th, storms nearly daily, mostly snow, which is now two feet deep on a level.

Palermo, N. Y.—A hard drifting snow-storm 18 inches, 3d, 4th, 5th;

misty rain 14th, covering trees with ice; mean temperature of winter $22^{\circ}2$; snowfall 112.5 inches.

North Volney, N. Y.—Aurora in luminous patches 5th; snow on 18 days, frozen rain on four, and rain on other three days.

Newark Valley, N. Y.—Remarkably mild month; little frost in ground.

Buffalo, N. Y.—February, mean temperature higher than in 11 years; ground bare of snow from 11th to 21st.

Newark, N. J.—Aurora 4th; the warmest February in 25 years was in 1851, the coldest in 1858; the average mean of the 25 was $30^{\circ}48$; this month, $33^{\circ}29$.

Morristown, N. J.—Very mild winter; only 16 inches snow; 11.66 inches water; average temperature 32.42 ; thermometer but once down to 9° .

Rio Grande, N. J.—Heavy thunder, diffuse lightning, great rain, 3d, 8 to 9 p. m.

Newton, N. J.—On 3d, snow last night; sleet and hail 7 a. m.; drizzly rain 2 p. m., frequent lightning; some wind and drizzle 6 to 9 p. m.; aurora 5th.

New Germantown, N. J.—Frequent flashes lightning 3d; auroras 5th, 11th.

Newfield, N. J.—Bluebirds 1st; thunder and lightning 3d; auroras 5th, 11th; robins 8th; larks and blackbirds 13th; frogs 14th; temperature 10° above last February.

Greenwich, N. J.—*Viola tricolor* 1st; dandelion 14th; lowest temperature this year, 28th; month very mild and open, but winter “went out like a lion.”

Vineland, N. J.—Only three days, (5th, 7th, 28th,) below 32° all day.

Nyces, Pa.—Heavy rain, thunder and lightning at 7 p. m. 3d; thermometer at 30° .

Fallsington, Pa.—A mild, open, moist month, and bad roads.

Plymouth Meeting, Pa.—Froze in shade at m. on 1st, 2d, 5th, 27th, 28th, only.

Dyberry, Pa.—Thunder-storm 3d; robin 13th. Sleighing December 8th to February 13th. Last fortnight changeable weather, and much sickness from colds, &c.; February, snowfall 9.5 inches; all winter, 47.2 inches.

White Hall, Pa.—Snow, rain, lightning, thunder, 3d; bluebirds and robins 13th; much alternating snow, rain, cloud, clear, all the month.

Factoryville, Pa.—Snow, sleet, rain, lightning, thunder, snow again, 3d; month unusually mild; winter 4° warmer than average of four last; thermometer below zero only on December 11th.

West Chester, Pa.—Much lightning, some thunder, evening 3d; blackbirds 14th.

Phenixville, Pa.—Thunder-storm at 6 p. m. 3d; blackbirds 15th.

Ephrata, Pa.—Thunder-gust from west, with little wind, 6 to 8 p. m. 3d.

Fountain Dale, Pa.—Bluebirds and mountain robins, (red thrush,) 10th; robins 21st; except “lion-like,” 27th and 28th, the month was fine—little frost, ice, or snow.

Tioga, Pa.—Diffuse lightning south, 7 p. m., 3d; aurora 5th.

Grampian Hills, Pa.—Snow still very deep 1st; fields getting bare 21st. First half of month mostly moderate and fair; last half cloudy, stormy, cold.

Franklin, Pa.—Rain on eight and snow on 13 days; mean of February, 1868, $18^{\circ}56$; of this month $24^{\circ}75$.

New Castle, Pa.—Winter very mild; extremes both in February, (13th and 28th.)

Canonsburg, Pa.—Violent wind at night 2d; smoky, then snow at night, 3d; bluebirds 3d; robins 21st.

Woodlawn, Md.—Frog music in marshes 13th; robins 14th.

Johnstown, Va.—Rain last night; showers p. m. with distant lightning and thunder, 3d; frogs 12th; lightning, blackbirds, violets, 15th; (last year, violets March 25;) ice in a tub half an inch thick 24th.

Hampton, Va.—Lightning southeast 3d; weeping willows in full leaf 19th; robins 21st; narcissus 23d.

Bacon Castle, Va.—Thunder-shower 3d; alder and daisy 11th; elm in bloom 15th; turtle doves cooing 20th; maple and violets 24th. January and February both very mild, making a very mild winter.

Zuni Station, Va.—Brilliant aurora, distant lightning, 15th; maple blooming 18th; peach blossoms almost open 28th.

Lexington, Va.—Planted onions, crocus in blossom, hyacinth nearly, 13th.

Wytheville, Va.—Snow, rain, sleet, 1st and 2d; bluebirds, wild geese flying northwest, 12th; frogs 21st; doves cooing 22d; wheat looking well but bare and freezing.

White Day, West Va.—Thunder shower 3d; frequent snow squalls 16th to 27th.

Cabell Court House, West Va.—Wind, thunder, rain, snow, 3d; thunder, lightning, 13th.

Trinity College, N. C.—Ground frozen 5th; plum blooming 7th; ground frozen 16th; peach blooming 21st; ground frozen 25th and 26th to 28th inclusive.

Albemarle, N. C.—Small thunder cloud 3d; violets 4th; wild geese 6th; apricot 19th; coldest day this year 28th.

Aiken, S. C.—Robins 8th; peach blossoming 11th; thunder and lightning 14th.

Anderson, S. C.—Alder blooming 1st; cedar 19th; maple 21st; peach 23d; lunar halo and bow, 4° diameter, 24th. (All the colors were exhibited, equally bright, from circumference to centre—red, orange, yellow, green, blue, indigo, violet, red, orange, yellow—the last filling the interior space.) Except December and the last three days of February, this winter was “a failure.”

Gowdysville, S. C.—Heavy general rain, then thunder, rain, and hail, 2d and 3d; ice, ground frozen, 5th; violets 6th; alder 11th; peach and plum 23d; snow 25th; severe freeze, endangering wheat, 28th.

Atlanta, Ga.—Fog, diffuse lightning, 9th; thunder storm 22d.

Macon, Ga.—Thunder and lightning in southwest evening 9th.

Moulton, Ala.—Month unusually mild, damp, cloudy, few heavy rains, snow scarcely whitened ground, no severely cold days.

Havana, Ala.—Thunder 1st, 9th; lightning 9th, 22d; light dash or snow 23d; frost and ice 28th.

Jacksonville, Fla.—First flakes of snow since February 27th, 1855, fell on 28th; mean temperature 3° above average; rain fall 4.87 inches above average.

Houston, Texas.—Auroras 2d, 5th, 28th; ice 23d; frost 24th, 28th.

Columbia, Texas—Thunder-storm with gale from southeast 12th; frost 28th.

Blue Branch, Texas.—Five inches sleet 21st; ice 8.10 inches thick 22d.

Lavacca, Texas.—Red mulberry in bloom 3d; mocking birds sing 10th; peach 13th; young dewberries set, plum blossom, 19th; coldest day this winter 28th; weather generally rainy and foggy all month.

Austin, Texas.—Peach 10th; lightning 12th, and thunder 21st.

Grenada, Miss.—Mist and light snow 3d; peach 10th; frogs, lizards,

butterflies, &c., 20th; rain and snow-flakes 22d, 23d; ground frozen 24th, 28th.

Brookhaven, Miss.—Frequent lightning and sharp thunder 1st; rain and sleet 3d; spit snow 4th; doves 8th; rattlesnake 10th; ice 23d.

Natchez, Miss.—Not one clear day; 5 rainy, 23 cloudy days.

Marian, Miss.—To 14th, rapid vegetation, since stationary; frost has nipped many peach blossoms, but farmers not yet discouraged.

Clarksville, Tenn.—Showers last night, ended in snow to-day, 3d.

Pine Grove, Ky.—Storm of wind and rain, ending in snow, 3d, 4th.

Clinton, Ky.—Frogs 10th; wild geese going north 13th; winter very mild; the great breadth of wheat sown looks fine, and a month forwarder than common.

New Lisbon, Ohio.—Bees 7th; bluebirds 13th; robins, crows 17th; larks 20th.

Milnersville, Ohio.—Heavy rain with thunder, 8 p. m. 3d; crows 9th; maple sugar manufacture commenced 11th.

Amesville, Ohio.—Spring-like 1st to 20th; snows light and few sleet storms, but from 20th to close it was quite wintry.

Kelly's Island, Ohio.—Drizzling at intervals 2d, 3d, 4th; channel clear of ice 15th; violent drifting snow and channel filled with ice 23d.

Sandusky, Ohio.—Ducks 13th; bluebirds 14th; nine inches snow 23d.

North Fairfield, Ohio.—Fog, mist, snow, wind, furious snow storm, 3d; first spring buds 10th; aurora 11th; bluebirds going south 16th; stormy month.

Carson, Ohio.—Rain at noon 2d, ended in blinding snow storm, east-northeast, 3d; bluebirds 12th; phebes 13th; robins 14th; drifting snow storm, east-northeast, 23d.

Marion, Ohio.—A month of frequent, sudden, and great changes.

Toledo, Ohio.—Rain, sleet, snow-storm, 2d, 3d; auroras 6th, 11th; highest February temperature (66°) in many years 15th; good sleighing 23d to close; a foot of snow on ground.

Urbana, Ohio.—Ice gone (remained here since November) 11th; lightning at night 14th; ponds frozen again 23d.

Bethel, Ohio.—Rainbow 2d; very bright rainbow 3d; distant lightning 22d.

Adrian, Mich.—Song sparrows 11th; rain on 4 and snow on 10 days. Prospect for fruit good; wheat looks well.

Litchfield, Mich.—Auroras 11th, 17th; frogs 12th; thunder-shower 14th.

Grand Rapids, Mich.—Second term sleighing, 3d; used up 8th; third term, 24th, considerable snow yet on the ground.

Northport, Mich.—Except a few days, first half of month and more was very mild; the remainder was windy, cold, and stormy.

Aurora, Ind.—Occasional showers, at night snow, 3d; robins 11th; lightning, southeast, 6 to 7 p. m. 14th; robins left 23d.

Veray, Ind.—On 3d at 7 a. m. a rainbow of great beauty, and at 2 p. m. violent rain, hail and thunder; frogs 10th; lightning in east 14th; crocus 20th.

Spiceland, Ind.—Moderate rain, then snow, 3d; month unusually mild, mean temperature 5° above the average of 14 years.

New Albany, Ind.—House-fly, 2d; sprinkle of snow (colder than since Jan. 1st) 4th; sparrows 6th; crocus, silver maple, 12th; cold 23d to close.

Knightstown, Ind.—Lightning southeast in p. m. 14th; wild pigeons 15th; wild geese flying to southwest 24th.

Kentland, Ind.—Sleet, then rain all day, 2d; ending with snow storm 3d; spring like 3d to 18th; ground not frozen since general thaw.

Sunman, Ind.—Heaviest snow this winter (five inches) 22d; grain looks well and fruit is all safe yet.

Chicago, Ill.—First schooner from Saugatuck, Mich., 1st; lake navigation clear in all directions; aurora, 11th. Lake Michigan less ice this winter than for many years.

Kings Mills, Ill.—After 14th, stormy several days at a time, drifting snows and unpleasant; after 22d, very cold.

Belvidere, Ill.—Snow storm with heavy wind 3d. This winter 60.88 warmer than last; this February 70.97 warmer than last.

Ottawa, Ill.—Rain, hail, snow, sleet, 2d, 3d, 4th; then mild and thaw to 12th; snow storms and flurries 14th to 23d; Illinois and Fox rivers free of ice 17th; frozen over again 28th.

Winnebago, Ill.—Snow, sleet, 1st; drifting snow 2d; aurora 3d; mean temperature of this 20.59 above average of last 12 Februarys; this winter 20.35 above average of last 10 winters, in which 1862-'63 was warmest.

Hennepin, Ill.—Dull, foggy, misty, and some snow till 11th; bluebirds 13th; after this variable, frequent snows till close.

Loami, Ill.—Frogs, bluebirds, 12th; sugar-makers in woods, "distilling liquid sweets for daily use," 5th to 12th.

Dubois, Ill.—Drizzling 1st, 2d; changed to snow 3d; crows from south 10th; frogs 12th; turtle-doves cooing 19th.

Waterloo, Ill.—Rain 1st; dense fog 2d; snow 3d; bluebirds came 12th, but disappeared before 28th.

Mt. Sterling, Ill.—Mild till 22d, so that buds and grain needed the six inches snow on 21st to save them from the cold 23d, 27th, and 28th.

Andalusia, Ill.—Very brilliant aurora 3d; only appearance of wild geese and ducks 12th; river clear of ice 16th; full of ice again 28th.

Manitowoc, Wis.—Aurora—arch, beams, and corona, 7, 10, and 11 p. m. 3d; frogs morning and evening 7th and 9th.

Plymouth, Wis.—Bright but light-colored aurora 3d, after a heavy snow storm of 14 inches of snow.

Embarrass, Wis.—Brilliant aurora p. m. 3d; faint, a. m. 4th.

Baraboo, Wis.—Severe snow, drifting roads full, 3d; pleasant ever since.

Madison, Wis.—Brilliant aurora, arched band, and bright rays, 3d.

Rocky Run, Wis.—Aurora (streamers) 3d; (diffuse) 4th, 6th, 10th, 11th.

Rochester, Minn.—Auroral arch 3d; auroral light 4th; sleet, loud thunder, and vivid lightning in east, 13th.

St. Paul, Minn.—First 19 days very mild, the rest moderately cold. Two Februarys and one winter in 10 years have been milder, but this February had more snow and rain than any known—2.83 inches; average in 10 years but little over half an inch.

New Ulm, Minn.—Auroras (bright streamers) 3d; (even light) 4th.

Clinton, Iowa.—Rain, snow, 1st; snow all day, roads blocked, 2d; aurora 3d; river clear 17th; frozen again 23d. Mostly a spring-like month.

Dubuque, Iowa.—Rain last night, after lightning and thunder, 13th.

Monticello, Iowa.—Auroras 3d and 4th; Maquoketa river free from ice first time this winter 15th.

Bowen's Prairie, Iowa.—Snow-storm 2d, 3d; pleasant till 12th; rainy till 15th; pleasant till 18th; six inches snow 18th; steadiest cold we have had till close; a pleasant winter and best sleighing we have had for years.

Muscatine, Iowa.—Wild ducks 12th; ice broke up 15th; steamboats run 22d.

Guttenberg, Iowa.—Month wet and sloppy; hard on cattle.

Iowa City, Iowa.—Beautiful aurora, numerous streamers, 3d; snow-storm (eight inches) 1st, 2d, 3d; month very mild, frost out of ground

Independence, Iowa.—Snow all day 2d; aurora 3d; month ended wintry.

Waterloo, Iowa.—Forty hours snow (14 inches) 3d, 4th; Cedar river open 14th.

Iowa Falls, Iowa.—Rain, sleet, snow 1st; drifting snow storm 2d; aurora 3d.

Algona, Iowa.—Rain, snow, badly drifting snow storm 1st, 2d, 3d; auroras 3d, 4th; sharp lightning in west 12th; an unusually pleasant month.

Near Algona, Iowa.—Most brilliant aurora of the season, arch and streamers 3d; auroras 4th, 9th, 11th.

Boonesboro', Iowa.—Ice-sleet 1st; northeast snow storm 2d; drifting snow-storm 3d, blockading roads; aurora 3d.

Rolfe, Iowa.—Hail-storms, with lightning and thunder, 12th, 13th.

Lizard, Iowa.—Brilliant aurora 3d; lightning and heavy thunder (night) 12th.

Grant City, Iowa.—On 3d, old snow 12.5 inches deep, new fallen 11.5 inches.

Logan, Iowa.—Beautiful aurora 3d; forked lightning in southeast 16th.

Woodbine, Iowa.—Faint aurora 3d; first part of month spring-like, last cold; snow all gone except drifts.

St. Louis, Mo.—Steady drizzle, snow-storm 2d, 3d; sleet and freeze 21st.

Hematite, Mo.—Bluebirds 1st; frogs 6th; yellow crocus and buttercup 13th; robins 15th; snow gone 25th. Snow for December and February (none in January) one foot. December the coldest, and January and February, the mildest ever known here.

Rolla, Mo.—Sprinklings 1st; showers 2d; snowy 3d, 26th.

Bolivar, Mo.—Frogs, robins, &c., 8th; were quieted before close of month.

Jefferson City, Mo.—River navigable all winter except a few days.

Hermitage, Mo.—Very uniform high temperature to 21st; only snow in February (1½ inch) 22d; no ice in the streams all month.

Warrensburg, Mo.—Lightning 9 p. m., thunder in night, 12th; again 19th; pellet snow 20th.

Oregon, Mo.—Bright aurora, no streamers, 8 to 10 p. m. 3d.

Atchison, Kansas.—Ice out of river 9th; thunder-shower 1 to 2 a. m. 13th; river blockaded with ice 23d; mildest February ever seen here.

Leavenicorth, Kansas.—Distant lightning and thunder p. m. 12th; lightning p. m. 26th.

Lawrence, Kansas.—Frost out of ground 8th; bluebirds 10th; farmers ploughing 18th; Kansas river open all February.

Holton, Kansas.—Month of snow, rain, and mud; cattle-feed growing scarce; fruit safe except peaches; fall wheat looks well; some spring wheat sowed.

Burlington, Kansas.—Mostly foggy till 10th; lightning 11th; bees out 12th. Month variable, but no extreme changes of temperature.

Neosho Falls, Kansas.—Wild geese and ducks all winter; no ice put up.

Manhattan, Kansas.—Farmers sowing spring wheat; cold after 20th.

Dakota, Neb.—Brilliant aurora 3d; ice on river unsafe 16th; safe 22d.

Glendale, Neb.—Blustery 2d, 3d; snow drifted 4th; Missouri and Platte rivers breaking up 10th; rain, with lightning and thunder in southwest, p. m. 12th.

Nebraska City, Neb.—Aurora, faint white, 3d; ice broken up in river, blue-birds, zigzag lightning and thunder in west, p. m. 12th.

Peru, Neb.—Damp, drifted snow 2d; aurora, no arch, rays to zenith, 3d.

Sitka, Alaska.—Night of November 13th, 14th last, between this and California, a meteoric shower. Between 10 and 11.30 from 10 to 100 per minute; continued till daylight; first appeared in southeast and passed to northwest. It was similar to but less brilliant than one seen in Massachusetts in 1833.

NOTES OF WEATHER FOR MARCH, 1869.

Lisbon, Me.—A month of fine weather, but six days below zero.

Houlton, Me.—Aurora 9th, beams to the zenith, and there whirled as if they met opposing currents; at 8 p. m. the southern horizon was lighted up; later, a band of light from east to west; color, white with occasional red tinge.

Steuben, Me.—Auroras 7th, 8th, 13th, and a brilliant one 9th, red, blue and green, mixed with white light. The rain at end of March melted the snow.

Williamsburg, Me.—Auroras 7th, 9th, the latter very bright.

West Waterville, Me.—Auroras 7th, 9th; robins 14th but left again. Temperature of month, $10^{\circ}.48$ below last year's, and $5^{\circ}.51$ below average of five years. Winter snow, 105 inches.

Gardiner, Me.—Auroras 1st, 2d, 7th, 8th, 9th, 11th, 16th, 18th. Good sleighing the whole month. March, mean temperature for 33 years, $29^{\circ}.98$; this year, $24^{\circ}.75$.

Standish, Me.—Faint auroras 1st, 7th, 8th; bright 9th, 17th—crows, 13th. Good sleighing the whole month.

Norway, Me.—Coldest morning this winter, 6th. Month $7^{\circ}.5$ colder than in 1868.

Cornish, Me.—Auroras 2d, 5th, 6th, 9th, 12th, 13th. Song sparrow, 12th.

Cornishville, Me.—Average March temperature for 40 years, 28° ; this, $24^{\circ}.43$. Snow hard, three to four feet deep. Cold freezing rain on 28th, 29th, damaged trees.

Antrim, N. H.—Snow fell on 43 days since in October last.

Stratford, N. H.—Month cold and stormy; snow now five feet deep in woods.

Goffstown Centre, N. H.—Coldest weather of winter, 1st to 7th; auroras 6th, 7th, 8th; bluebirds 27th, robins 28th. Month cold, good sleighing throughout.

Lunenburg, Vt.—Snow four to five feet deep; roads high as the fences.

Barnet, Vt.—Very cold March, ice on Connecticut river two feet thick—no spring birds—maple sap not flowing; snow never as deep on 1st April.

Craftsbury, Vt.—Month 13° colder than in 1868, its first week the coldest this winter. More than $12\frac{1}{2}$ feet snow fell since October 17th.

East Bethel, Vt.—Coldest month this winter; on 1st thermometer from 25° to 36° below zero in this section; robins and bluebirds 27th, song sparrow 31st.

Woodstock, Vt.—Robins and bluebirds 29th. Snowfall, 26 inches.

West Charlotte, Vt.—Auroras 8th, 9th; robins 29th, phebes 29th.

Middlebury, Vt.—Month unusually cold, rivers yet sealed over.

Brandon, Vt.—Coldest day this year, 1st; robins 29th, blue birds 30th.

Kingston, Mass.—Aurora 9th, blue birds 13th, robins 16th. Only 36 inches snow this winter against 96 last. Mean temperature of March below January's.

Topsfield, Mass.—Blue birds 11th; month closes spring-like.

Milton, Mass.—In the 56 hours previous to 31st 2.6 inches rain fell. Coldest March since 1863.

Billerica, Mass.—Snow and frost nearly gone; spring birds here.

New Bedford, Mass.—Wild geese 14th; crocus 24th; robins and blue-birds 25th.

Worcester, Mass.—Aurora 9th; bluebirds 14th; robins 26th.

Mendon, Mass.—Bright aurora 5th; robins, wild geese 28th. Snow gone.

Lunenburg, Mass.—Coldest March since 1863, ($27^{\circ}.34.$) and $6^{\circ}.08$ colder than March, average of 30 years ($3^{\circ}.16.$) Sleighing good till 26th.

Amherst, Mass.—Coldest days of winter 1st, 2d; bluebirds 19th; robins 28th. Constant sleighing for 110 days.

Williamstown, Mass.—Aurora 9th; sleighing still good 24th; robins and a thaw 27th; bluebirds 28th.

Hinsdale, Mass.—Aurora 9th. A cold stormy month, severest of the winter. Over 120 days sleighing this winter, and good yet.

Pomfret, Conn.—Cold, rough March, frightful to invalids; coldest in 17 years, except 1856, with mean $22^{\circ}.6.$ The warmest was 1857, mean $38^{\circ}.50.$

Columbia, Conn.—Brilliant aurora 14th; snow and thunder 15th.

Middletown, Conn.—River again closed 1st; open 11th; first shad 27th.

Waterbury, Conn.—Aurora, pale white light, 9th; bluebirds 12th.

Colebrook, Conn.—Blue birds 10th; sleighing from December 6th to March 28th.

Brookfield, Conn.—March severer than the winter months; roads very muddy.

Moriches, N. Y.—Aurora 9th; big frogs talking vehemently 28th.

South Hartford, N. Y.—Wild geese 25th; woodchucks 26th; robins 27th; ground yet covered with snow. First three weeks the severest part of winter. Sleighing 111 days.

Garrisons, N. Y.—Auroral light 31st. Month unusually cold.

Nyack, N. Y.—Bright aurora 10th; frogs and birds 17th.

New York, N. Y.—Aurora with a steady white light 9th.

Minarville, N. Y.—Bitter cold and windy till 25th; good sleighing from December 6th to March 28th; robins and bluebirds 27th. Streams opened 29th.

Sloansville, N. Y.—Bright aurora 1st; very bright 17th; maple sap not flowing; good sleighing all month; but little frost in the ground.

North Hammond, N. Y.—Crows 9th; sparrows 27th; robins 29th. More snow on ground than ever known at close of March.

Houseville, N. Y.—Auroras 4th, 17th; snow four feet deep in woods 20th; thaw 25th; snow yet three feet deep 30th.

Leyden, N. Y.—Bright aurora 9th; faint auroras 13th, 16th; blue-birds 28th. The pine bulfinch migrated here from Hudson's Bay in November, and is yet here feeding on maple buds. We had only one entirely clear day in March.

South Trenton, N. Y.—Bluebirds 25th; robins 30th. Little snow and no frost left.

Depauville, N. Y.—Auroras 4th, 6th, 18th; crow 10th; rain and thaw 26th. Month more wintry than January. March, 1865, was $10^{\circ}.9.$, and of 1868 $7^{\circ}.9$ warmer than the month just past.

Oswego, N. Y.—Sleighing good till 22d, when robins came.

Palermo, N. Y.—Thaw on 25th; snow as high as the fences. Coldest March in 16 years, except in 1856, and stormed on 25 days. Ground

covered with snow four months and two days, and 116 days sleighing this winter.

North Volney, N. Y.—Auroras 1st, 9th, 31st; robins and bluebirds 28th.

Newark Valley, N. Y.—Month steadily but not intensely cold; over 100 days sleighing this winter; ground but little frozen.

Little Genesee, N. Y.—March was winter continued; from December 10th till 24th good sleighing nearly all the time.

Buffalo, N. Y.—Robins and bluebirds 26th, a fortnight late; pigeon 31st. Month 6° below average of 11 years; after 25th spring like; sleighing till 20th.

Trenton, N. J.—The lowest temperature of winter was in March; December 25th 8° , March 1st 6° ; so cold in March only twice (1856 and 1860) in 25 years, and the mean temperature lower than any of the 25 except in 1852, 1856, and 1863. Fair weather about 20 days.

New Germantown, N. J.—No sleighing in March; some ploughing done.

New Field, N. J.—Coldest day of winter 1st; thousands of crows and blackbirds 24th; farmers planting early potatoes 25th; chewink heard 30th.

Nyces, Pa.—Bluebirds 14th; robins and blackbirds 25th. Some snow yet.

Fallsington, Pa.—First frogs 10th. A cold wet month, to be followed "probably" by a dry summer. Please observe.

Horsham, Pa.—March came in like a lion, blustering and cold the first week; frogs 13th; went out lamb-like, but wet, so that little ploughing is done.

Plymouth Meeting, Pa.—Steadily cold till 9th, mild till 15th, cold till 19th; variable till close.

Dyberry, Pa.—Aurora 9th; bluebirds 13th; robins 26th; liverwort 27th; phebe-bird 30th. Sleighing 109 days, and winter's snow-fall 62 inches.

Factoryville, Pa.—Very cold till 25th; mean of six years, $33^{\circ}.07$; this March, $28^{\circ}.17$.

Phenixville, Pa.—Robins 6th; bluebirds 9th; butterfly and bees 24th; ploughing 25th.

Ephrata, Pa.—Frogs 13th; pewee 27th; raspberry buds bursting 27th.

Harrisburg, Pa.—Thunder-gust 10th. Snow on six and rain on eight days.

Carlisle, Pa.—First thunder-storm 10th; blackbirds 17th. Wheat promises finely.

Williamsport, Pa.—Frogs 27th; flood in Susquehanna 27th to 30th.

Grampian Hills, Pa.—Coldest morning of winter 5th; winter snow-fall 102 inches.

Connellsville, Pa.—Thunder-storm 10th; doves 19th; frogs 24th.

Newcastle, Pa.—Coldest day this winter 16th. Coldest March in ten years.

Beaver, Pa.—Warm a. m. 10th; p. m. thunder-storm; thermometer fell 30° , and some snow. A mild winter; not down to zero since New Year's day.

Canonsburg, Pa.—Lightning and thunder in southwest 10th; killdeer 21st; lark 28th.

Woodlawn, Md.—Susquehanna closed 7th; opened 9th; snake 27th. Rain or snow 15 days, making roads muddy, and delaying farm work.

Johnsontown, Va.—Coldest day since December 12 7th; strawberry blossoms 17th; peach 28th, (last year 31st.)

Hampton, Va.—Hyacinths 15th; peach 22d; wild plum 24th.

Bacon's Castle, Va.—Coldest morning this year 7th; daisy 8th; plum and peach 23d; Indian corn planted 25th; martins and whip-poor-wills 27th. A boisterous, windy month.

Zuni Station, Va.—Faint aurora 31st. Only one cloudless day, but a favorable month for farmers who have improved it.

Comorn, Va.—A March colder than February or January; yet no thick ice.

Mount Solon, Va.—Month cloudy and damp, with little rain till close.

Lexington, Va.—Planted peas 4th; Goodrich potatoes 12th; sowed oats 18th.

Wytheville, Va.—Lightning in north 31st; except a few days a cold, wet month.

Weston, W. Va.—More stormy than winter months; hail, rain, snow, thunder and lightning, sometimes all in one day of 24 hours.

Cabell Court House, W. Va.—Thunder-shower; vivid lightning; snow and sleet 14th and 15th.

Kenansville, N. C.—Light showers 10th, and lightning in east in evening.

Oxford, N. C.—Peach and plum in bloom 14th; martins 27th.

Trinity College, N. C.—Brilliant aurora 9th; bluebirds 11th; peach 13th; corn planting 17th; frost, injuring peaches some, 23d; heavy thunder, no lightning seen, 28th.

Albemarle, N. C.—First three days blasted some peach blossoms; thunder-storms 9th, 19th; whip-poor-will 25th; grain telling well, and farmers planting corn.

Gowdysville, S. C.—Ice 18th, killing peaches in full bloom; strawberry 23d; frost 23d, 24th; cherries 27th to 30th. The coldest March in several years.

Camden, S. C.—Frost 13th, 18th, 24th; thunder-storm 29th; spring-like 30th, 31st.

Anderson, S. C.—Peach 10th to 15th; pear 24th to 28th; wet, but good for vegetation.

Macon, Ga.—Frost 1st, 7th; lightning 19th. But little rain in March.

Moulton, Ala.—Frost on six mornings, and ice 6th, 7th, and 16th; martins 22d; lightning and thunder 25th. March wet; no heavy rains; season forward.

Greene Springs, Ala.—Only heavy rain 3d; thunder-shower 19th. After first week, favorable for planting; fruit not much injured by frosts.

Jacksonville, Fla.—Frost 1st; since, vegetation advanced rapidly.

Port Orange, Fla.—Frost and ice 1st, killing orange buds and young trees; also new growth of peach and other trees.

Pilatka, Fla.—Frost 2d, killing cucumber, beans, tomatoes, &c.

Gilmer, Texas.—Month backward; unfavorable for planting. Corn nearly all planted; fruit prospect very good.

Houston, Texas.—Aurora 6th; thunder-showers 19th, 23d.

Columbia, Texas.—Frost 1st, 6th; snow, with thunder, 9th, 19th.

Lavaca, Texas.—Swans going north 1st; tornado from northwest, with vivid lightning and heavy thunder, 9th; martins 14th.

Waco, Texas.—Last frost 16th; grasshoppers have destroyed gardens, and are injuring vines and trees.

New Orleans, La.—Slight frost 1st; snakes abundant 12th. Spring tardy.

Grenada, Miss.—Ground frozen 1st, 5th, 7th; thunder-storm, changing to sleet and snow, 15th; peaches much injured, and planting two to three weeks late.

Natchez, Miss.—Cold and frosty 1st; light frost 16th; not one clear day.

Marion, Miss.—Severe frost 1st; mocking birds 12th; fireflies 30th.

Elizabethton, Tenn.—Ground frozen 6th; frost 30th; peaches not much injured; wheat hardy and thrifty.

Clarksville, Tenn.—Fierce gale from northwest 6th; thunder-storms 22d, 28th, 29th.

Trenton, Tenn.—Sleet 3d; slight snows 10th, 11th; thunder-showers 14th, 19th, 29th; thunder-storms, with hail, 15th, 19th.

Memphis, Tenn.—Snow, 11th; rain froze in gauge, 15th; season backward.

Pine Grove, Ky.—Snowed on 3d, 8th, 11th, 12th, 15th; snowed or rained on 17 days; season late; peaches not much injured yet.

Lexington, Ky.—Martins 23d; first real spring day 27th; month chilly.

Clinton, Ky.—Heavy frost 2d; snow 3d; thunder-storm with sleet 14th; frost 23d; peach and plum in bloom 27th; toads 27th; fruit safe; wheat promising.

New Lisbon, Ohio.—Thunder and snow-storm 10th; awful snow-storm 22d; bluebirds, martins 26th; roughest March ever known; vegetation not started.

Steubenville, Ohio.—Thunder-storm 10th; frost on 10 mornings; snow on four days.

Painesville, Ohio.—Robins 3d; swans going north 16th; frogs 28th; oriole 30th.

Gilmore, Ohio.—Thunder-storm with vivid lightning 10th; frost and snow gone.

Kelley's Island, Ohio.—Tedious snow-storms 10th, 22d, each about five inches.

Sandusky, Ohio.—Bluebirds 25th; pewees returned and nesting 26th.

North Fairfield, Ohio.—Snow three inches 10th; six inches snow 15th; five inches snow 22d; bluebirds returned after three weeks' absence 24th; frogs 28th; coldest March in eight years.

Carson, Ohio.—Meadow-larks 14th; killdeer and blackbirds 19th; pigeons 26th.

Hillsboro, Ohio.—March colder than January or February, but warmer than in 1867.

Bowling Green, Ohio.—Five snows (16.5 inches) in March; left 25th to 28th; frost gone 31st. Wheat well protected all winter, and promises well.

Urbana, Ohio.—Robins 1st; meadow-lark 9th; frogs 26th. Mean temperature of January, 33°.88; February, 32°.88; March, 32°.

Bethel, Ohio.—Thunder-shower 25th. December and March the coldest months of the winter. The peaches are yet safe, except about one-fourth killed in March.

Jacksonburg, Ohio.—Lightning in the north 14th; zigzag lightning with heavy thunder 25th; thunder-storm 28th.

College Hill, Ohio.—Thunder, heavy rain, but little wind, 1st; wind storm, and thermometer fell 22° in 12 hours, 6th.

Monroe, Mich.—Snow melting, and freshets 23d to 31st; wheat promising; spring birds and frogs musical and jubilant.

Lansing, Mich.—Meadow-larks 18th; robins and bluebirds 26th; first thunder-storm 28th; frogs 29th. The river is free of ice.

Litchfield, Mich.—Coldest morning of winter by 4° 16th; heavy thunder and warm rain 28th; a severe March; snow gone except drifts.

Coldwater, Mich.—Robins and bluebirds 25th; light thunder-shower 28th.

Grand Rapids, Mich.—Thunder-shower 28th; steamboats running 29th.

Northport, Mich.—Coldest morning this winter 4th; aurora 13th.

Homestead, Mich.—Thunder-showers 27th, 28th; but little maple sugar yet.

Pleasanton, Mich.—Snow 24 inches deep in sheltered spots; leeks an inch long under it. Potatoes are often left in the ground all winter without injury.

Copper Falls, Mich.—Greater extremes than in any winter month, and 11°.19 colder than last March; sleighing good except two days.

Penn Mine, Mich.—On the 10th 21° below zero at Houghton, 10 miles distant.

Vevay, Ind.—Storm 14th; gusts of wind from southwest, incessant roar of thunder and occasional flashes of lightning till 15th, when it ended in snow; thunder-storm from south 25th, with a terrific electric explosion; peaches killed and rose-bushes blighted with March cold.

Spiceland, Ind.—Stormy and wintry 4th, 22d; March colder than either January or February.

New Albany, Ind.—Terrible thunder-storm of rain, hail, and snow 15th; pewee 21st; thunder-storm 25th, 31st; severe rain-storm 29th.

Columbia City, Ind.—Snowed all day 4th, 5th, 6th, 7th, 10th, 22d; first thunder-storm 28th; frogs, martins, 29th.

Knightstown, Ind.—Bluebirds, robins, 20th; month severe by spells.

Indianapolis, Ind.—Diffused aurora 17th; bluebirds and pewees 27th.

Marengo, Ill.—Diffused aurora 2d; robins 24th; thunder and lightning 27th.

Golconda, Ill.—Deluges of rain 14th, 22d; large flocks of blackbirds 16th.

King's Mills, Ill.—Aurora, streamers, 1st; bluebirds and robins 23d; cold, unpleasant month; spring wheat not sowed; poor prospect for ploughing.

Louisville, Ill.—Peaches not much hurt; no spring work done yet.

Sandwich, Ill.—Fox river closed 85 days, opened February 26th; closed again 6th, opened 26th; wild geese February 26th, again 26th; bluebirds 26th; robins 27th.

Belvidere, Ill.—Heavy fall of snow 12th; March, mean temperature in 1867, 27°.78; 1868, 35°.75; 1869, 27°.69; ground not yet ready for sowing wheat.

Winnebago, Ill.—First thunder-storm 27th; mean temperature 4°.11 below the March temperature of 11 years.

Wyanet, Ill.—Aurora 2d; blackbirds 23d; robins 25th; thunder showers 27th.

Hennepin, Ill.—Furious west wind, worst storm this winter, 29th; spring birds plenty; not much ploughing and sowing done yet.

Tiskilwa, Ill.—Thunder-storm 27th; frost out of the ground 31st.

Springfield, Ill.—First thunder (no rain) 27th; thunder (little rain) 31st.

Dubois, Ill.—Coldest March day known 5th; severe northwest storm, snow, hail, lightning, thunder 14th; pewee 16th; mud very deep; peaches killed; other fruit safe.

Waterloo, Ill.—Snow (6 inches) 3d; 24 hours rain 9th; frogs 25th; martins 27th.

South Pass, Ill.—Frost and wind of 5th and 6th injured many peaches; thunder-storm 14th; season unusually backward; no ploughing done.

Manchester, Ill.—Martins 3d; lightning, snow-storm 14th.

Mt. Sterling, Ill.—First thunder-storm 27th; frost nearly gone, but fields covered with water; farmers fear they will be unable to sow spring wheat.

Warsaw, Ill.—Sharp lightning and heavy thunder in west and north 31st.

Manitowoc, Wis.—Auroras 1st, 17th; thunder-storm from west 27th.

Plymouth, Wis.—Average mean of March for five years, 27° ; this March 25° . April comes in with a heavy northeast snow-storm.

Milwaukee, Wis.—Auroras 2d, 16th; first thunder showers 27th.

Hingham, Wis.—Auroras 1st, 2d, 17th; robins; first thunder-storm 27th.

Embarass, Wis.—Auroras 2d, 8th, 10th, 18th, 30th; loud thunder 27th.

Rocky Run, Wis.—Diffuse auroras 1st, 2d, 8th, 10th, 11th, 12th; ploughing 30th; regular northeast snow-storm 31st. Till 21st good strong winter; then till 30th fair April.

Rochester, Minn.—Auroral arch 2d, 17th; faint auroral light 14th.

St. Paul, Minn.—Coldest day since December 10th, 4th; fair sleighing till 23d; river open to Lake Pepin 31st. An unusually changeable March.

Afton, Minn.—Aurora 2d; last sleighing 26th; bluebirds 27th; robins 28th.

Koniska, Minn.—Crow river ice, 31 inches; breaks up 28th; singing of birds 29th.

New Ulm, Minn.—Auroras 1st, 2d, 10th; snow all day, increasing p. m. 31st.

Madelia, Minn.—Watonwan river opens 27th; northeast snow-storm 31st.

Clinton, Iowa.—Robins 23d; frogs, thunder shower 27th. No farm work done yet.

Dubuque, Iowa.—Auroras 2d, 12th; first boat from St. Louis 31st.

Monticello, Iowa.—Farmers sowing wheat 25th; first thunder-storm, with hail, 27th.

Bowen's Prairie, Iowa.—Gale with rain, hail, lightning, thunder 27th.

Ft. Madison, Iowa.—Second visit of bluebirds 22d; robins 23d; larks 24th; cold March; little sowing done; winter wheat and rye look well.

Iowa City, Iowa.—First thunder-storm 27th; snow, rain, and hail-storm 31st.

Independence, Iowa.—Faint aurora 2d; bluebirds, plover 24th; robins 25th; first lightning and thunder 27th. March goes out in a big lightning snow-storm.

Waterloo, Iowa.—Bluebirds 24th; robins, frogs 26th; snow-storm all day 31st.

Rockford, Iowa.—March came in very pleasant; went out stormy.

Iowa Falls, Iowa.—Railroad snowed up for three weeks 13th; hard wind all day 31st.

Algona, Iowa.—Ground covered with snow since November 16th; over 100 days' good sleighing; a first-rate winter for business.

Rolfe, Iowa.—Bright aurora 2d; a mosquito 29th; lightning in south 30th.

Logan, Iowa.—Sharp lightning and thunder 30th; high wind all 31st.

Woodbine, Iowa.—Sowing wheat 24th; ants working, young grasshoppers 25th; thunder shower, with hail, 31st. Month rather backward.

St. Louis, Mo.—First thunder and lightning 14th; thunder showers 30th.

Hematite, Mo.—Bluebirds nesting 20th; terrific thunder-storm 31st at night.

Rolla, Mo.—Month had 16 stormy days and great and sudden changes— 40° or more in a day—besides much windy weather.

Jefferson City, Mo.—Snow and ice storm 14th; thunder and wind storm 31st.

Bolivar, Mo.—Heavy thunder, and heavens in a constant blaze, but no rain, 31st.

Warrensburg, Mo.—Coldest and most disagreeable winter in 25 years.

Harrisonville, Mo.—Distant thunder and diffuse lightning 27th, 31st.

Oregon, Mo.—Bees, bluebirds, 7th; prairies on fire 6th to 14th and 30th; snow all day and night 14th; robins 17th; first steamer up the river 22d; grasshoppers hatching out in great numbers 24th; frost out of ground 26th.

Leavenworth, Kansas.—Frogs 29th; hard frost a. m.; distant lightning 30th.

Holton, Kansas.—Bluebirds 8th; martins 30th; wheat nearly sown; fruit (except peaches) safe; month very changeable.

Lekoy, Kansas.—Wild geese here all winter, left for north 30th; thunder and diffuse lightning in southeast 31st; month dry, cool, and calm.

Burlington, Kansas.—Ground frozen 4.5 inches 5th; coldest day of season save one 15th; pewee, kingfisher 16th; kildeer 22d; martins 31st. Latest spring.

Neosho Falls, Kansas.—Robins 16th; blackbirds 26th. Cold, backward season.

Council Grove, Kansas.—Frost gone 9th, returned 10th; ground frozen 23d, frost out again 24th; excessive heat all day 31st.

Dakota, Neb.—Missouri broke up 22d, 10 days earlier than last year.

Elkhorn, Neb.—Horse-radish sprouting 2d; frost gone 31st.

Glendale, Neb.—Sudden change to cold 14th; some frost left yet.

Nebraska City, Neb.—Sudden cold 3d; river froze over 6th; ice left 7th; wheat sown 24th; pewee 30th; frogs 31st. Ploughing about 15th.

